AUGUST, 1958

AMATEUR RADIO

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EDITORIAL

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JUSTIFICATION

We often hear it said in official circles: "The Amateurs don't use the frequency space they have allocated to them, so why should they grizzle if they lose some of it." Taking a very shallow look at this sort of remark might lead one to think that they have something there. But to us that's just rubbish, for there is much more to it than the apparent lack of use of bands because a monitoring station situated in or near a capital city can "count on one hand" the stations operating in a given band.

Take for instance the International DX bands—20, 15 and 10 metres; unless the monitoring facilities provided for elaborate cross checks on logs, we venture to say it would be impossible to say how many stations in the Commonwealth were operating at the same time. But there is plenty of evidence that they are if one listens to the overseas stations calling VK stations, the VK stations not being audible from 5 to 500 or more miles away depending upon orientation and back-to-front ratios of antenna systems. The Amateurs are using the bands alright and they will therefore be justified in expecting to maintain the bands they have now after the next I.T.U. Conference. Australia is not the only country who thinks so and is prepared to put up a fight to hold on to the little its Amateurs have. Listen to what an eminent U.K. magazine said of recent date:

"Proceeding from the basic assumption that the ether is free for all to use subject to reasonable safeguards reached by mutual agreement—a principle which needs constantly re-emphasising — we should now look at the conditions under which Amateurs are at present operating. Briefly, on virtually all bands except ten metres, they are 'working in the cracks'. That is to say, our rightful allocations are being trespassed upon by illegal commercial stations, to say nothing of noises emanating apparently from idling jammer transmitters. Though these encroachments have been increasing steadily and the whole situation gets progressively worse, it is nevertheless being met in the sense that more and more Amateurs are coming on the air and a great deal of DX is being worked, world-wide, on both c.w. and phone.

"What this means is that Amateurs are quite capable of working under shared-band conditions, if they must. But it also implies that a shared-band means sharing—in other words, commercials have no grounds for complaint if they are being interfered with by Amateurs . . .

". . . in the same way that Amateurs as a body, the most experienced, capable and progressive communicators in the world—have long since ceased to expect their own frequencies to be clear of interference by other Amateur stations, so the commercial use of the spectrum as a whole must be worked out, geographically and in time, to allow one channel to serve as many interests and services as possible . . .

"The present level of Amateur activity, with the high state of development of the art of Amateur Radio, has become its own justification for a proper share of the ether. This is not a matter of "privilege' or even a 'right' (in the moral sense), but simply a requirement by virtue of sheer weight of numbers! Moreover, since Radio Amateurs are primarily concerned with and interested in Communication, they must have frequency areas available which are capable of carrying their DX traffic—that is to say, any suggestion that Amateurs can be compensated for h.f. bands lost by further allocations in the deserts of the u.h.f. or s.h.f. is completely unacceptable."

These pertinent remarks are only indicative of many being made in every country in the world. Unfortunately for the Amateur, the commercial people who want a whole channel to themselves or shared with some other country on an equitable basis geographically and in time, care little for the fact that the already narrow frequency limits of the Amateur bands are shared by thousands.

It seems certain that the Americas will retain their h.f. bands, U.K. apparently expects opposition, New Zealand, Hong Kong and other smaller Region III. countries expect to retain what they have at present. Which leaves Australia in the position—if reduction of the Amateur bands should be proposed—of sharing such frequencies with the Amateurs of other countries but not with its own Amateurs.

FEDERAL EXECUTIVE.

Overtone Crystal Oscillators*

BY R. M. WINCH,† VK2OA

OVERTONE crystal oscillators are crystal controlled oscillators operating on a frequency which is a multiple of the fundamental frequency of the crystal. They find their greatest use in providing the injection voltage of converters for the bands above 21 Mc. In converters operating on these bands it is not practicable to obtain the injection voltage direct from a crystal oscillator, consequently it is necessary to use frequency multipliers after the oscillator. However, it is almost impossible to eliminate the unwanted harmonics from the oscillator. These unwanted harmonics cause spurious beats and signals, so it is desirable to have the generated frequency as high as possible to reduce the number of spurious signals. Overtone oscillators are also used to some extent for transmitters, but they offer very little advantage over the normal fundamental frequency oscillators.

We are all aware of the way a quartz crystal is used as a shunt resonant circuit to control the frequency of a valve oscillator. The electrical equivalent of the crystal is shown in Fig. 1 in which C1 represents the capacity between the electrodes when the crystal is not vibrating, and L, C and R represent the mass, compliance and frictional loss of the crystal when vibrating. The crystal exhibits shunt resonance at a frequency corresponding to L and C plus C1. At this frequency the crystal has a very high impedance (with a very high Q) and is used in place of the LC circuit in an oscillator. However, the crystal also exhibits a series resonance at a frequency corresponding to L and C. This frequency is slightly lower than the shunt resonant frequency and at this frequency the crystal has a low impedance. At series resonance the crystal may be used to control an oscillator by placing it in series with the feedback loop. At the series resonant frequency the feedback will have a path of low impedance, but at other frequencies the path will have a high impedance and there will be very little feedback.

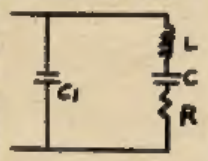


Fig. 1.

Quartz crystals also exhibit both shunt and series resonance at frequencies corresponding to odd multiples of the fundamental frequency. The reason why only odd harmonics may be used can be seen if the physical vibration of the crystal is visualised. With a shear type of vibration, the top surface of the crystal is moving, say, from left to right, while the bottom surface is moving from right to left. If we suppose a move from left to right to represent a positive voltage, and a move from right to left to represent a negative voltage, then we can see that a shear vibration of the crystal will generate a difference of potential between faces.

Now let's think of the crystal being composed of two layers. The top surface of the upper layer is moving from left to right and generating a positive voltage. The middle of the crystal, which is the bottom surface of the upper layer and the top surface of the lower layer, is moving from right to left, and generating a negative voltage, and the bottom surface of the lower layer is moving from left to right, generating a positive voltage. Consequently, there is no difference in potential between the top and bottom surfaces of the crystal. However, with a third layer there is a further reversal of voltage with a consequent difference of potential between the top and bottom surfaces.

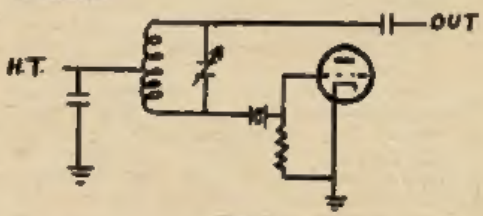


Fig. 2.

From this it will be seen that a crystal exhibits a difference of potential between top and bottom faces only when its mode of oscillation corresponds to an odd number of layers, i.e. at odd harmonics. This harmonic activity is influenced by the method of grinding and also the method of mounting the crystal.

Overseas, crystals specially prepared for harmonic operation are now in common use, and may be used in practically all the circuits which are used for fundamental operation. However, most of the crystals available to the Amateurs of this country will show sufficient activity on the third harmonic to be used in suitable circuits. Typical circuits are shown in Figs. 2 and 3. An examination of these circuits will show that Fig. 2 is a Hartley, and Fig. 3 is a plate tuned inductive feedback oscillator, and that in each case the crystal is in series with the feedback path to the grid, i.e. operating at its series resonant frequency.

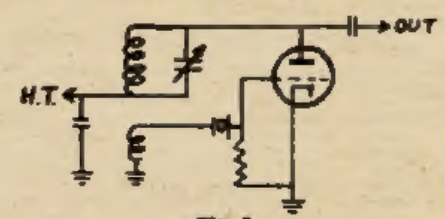


Fig. 3.

In both circuits the L and C combination is tuned to the desired frequency (three times the marked crystal frequency) and the feedback is adjusted so that there is just sufficient feedback to maintain stable oscillations.

If there is insufficient feedback, the oscillator will not start, and if there is too much feedback, sufficient energy will reach the grid, via the shunt capacity of the crystal, to maintain oscillations at a frequency determined by the LC circuit, and the oscillator will not be crystal controlled.

The amount of feedback required is a function of the gain of the valve (Eg, Ia) and the series impedance of the crystal. A crystal with good harmonic activity will have a lower series impedance and thus require less feedback than one with low harmonic activity. When the feedback is correctly adjusted, the oscillator will behave in the same manner as the normal fundamental oscillator.

As the LC circuit is tuned to a higher frequency, oscillations will commence, then gradually become weaker, and eventually stop. As with a fundamental oscillator the tuned circuit should be tuned just short of the point where maximum output is obtained, so as to obtain reliable starting and frequency stability. In Fig. 2 the feedback is increased by moving the tap nearer the plate end of the coil, and in Fig. 3 by increasing the size of the coupling coil or increasing its coupling to the plate coil. A good starting point in Fig. 2 is where the tap is approximately one-third of the way up the coil, and in Fig. 3 where the grid coil has one-third to one-half the number of turns of the plate coil.

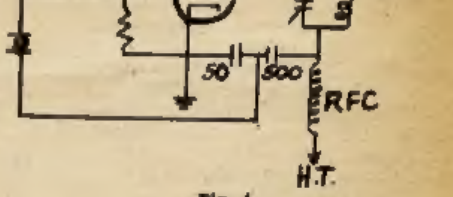


Fig. 4.

A convenient method of construction for the coils on Fig. 3 is to wind the plate coil on a former. Wire it into the circuit and, using the g.d.o., make sure it resonates at the desired frequency. Then, over the plate coil wind a layer of cellotape, sticky side out; wind the grid coil onto the tape with just sufficient tension to hold it in place, remembering that if the coils are wound in the same direction, the plate and grid connect to opposite ends. The whole grid coil can be slid up and down the plate coil to vary the coupling, being finally cemented into place when the correct adjustment is found. The plate coil should be proportioned so that the required freqeuncy is attained with approximately 50-60 pF. of tuning capacitor in use.

Another circuit which is becoming popular is the so-called Robert Dollar circuit, using capacitive feedback. This is shown in Fig. 4. The values of the feedback capacitors should be suitable for all crystals in the 6-9 Mc. range in

(Continued on Page 10)

* Reprinted from W.I.A. N.S.W. Division's "Bulletin".

† 38 Boundary Street, Parramatta, N.S.W.

AMATEUR TELEVISION

PART SIX

BY E. E. CORNELIUS,* VK6EC/T

AS Amateurs, we cannot take the liberties with the picture signals we transmit that we often take with our sound transmissions. Restricted bandwidth and speech compression can add to intelligibility if not taken to extremes, while fairly gross distortion can be tolerated.

In t.v. this is not the case, and while the picture information itself can be far from ideal, and yet present a reasonable picture, the sync. signals transmitted will have ot be reasonably close to standard. A t.v. receiver is a fairly precise instrument, extracting from the transmitted signal video and sync. information on a time-sharing basis. From the sync., it extracts line and frame informatioin differentiated on a pulse width basis. Sound and picture are separated later in the receiver by frequency discrimination and f.m./a.m. separation.

These requirements call for rather complex circuits in the receiver and any defects in the transmitted signals can show up as sound on vision and vice versa, poor synchronism on line or frame, or tearing of the picture on extreme blacks or whites.

Because of these considerations it is essential that the transmitted signals be supervised far more thoroughly than for a sound transmission. In sound broadcasting, a high quality monitor loudspeaker and v.u. meter are to be found at main points between microphone and transmitter. In t.v., even Amateur t.v., something to fulfil a parallel function is essential, and a suitable unit will now be discussed.

THE MASTER MONITOR

This monitor is supplied with picture signals from a circuit point as near the transmitting antenna as possible. It combines a high quality picture monitor, with a calibrated video waveform monitor. The picture monitor provides overall supervision of the transmitted picture quality. The video waveform monitor supervises the following:

1. Black level and set-up.
2. Line or frame "tilt", indicating horizontal or vertical shading.
3. Hum in the picture.
4. Modulation depth, or video level.
5. Video as to sync. ratio, which should be 100 : 40.
6. Black peaks in the sync. area, or white peaks which can cause overmodulation and intercarrier "buzz".
7. "Grass" or noise on sync. or blanking; deformed sync. or blanking pulses.
8. A rough indication of porch, sync., and blanking pulse widths.

In the unit to be described, an important auxiliary function, known as the "pulse cross" display. is provided and will be discussed later.

A block schematic of the unit is shown in Fig. 27.

* 157 Wood Street, Inglewood, Western Aus.

A sample of video, from camera, c.c.u., mixer or diode monitoring the carrier, at standard level of 1.4 volts p./p., is fed to the monitor. The picture is displayed on a 12 inch monitor tube, a VCR140. Two 5BP1 c.r. tubes form a dual c.r.o., displaying the video waveform at half line and half field (frame) rates. Simultaneous display of these two is an advantage, but not essential. The c.r.o. tubes have calibrated and illuminated graticules, as described for the c.c.u. A refinement is a calibrating circuit, run from line pulses, which will feed an accurate 1 volt p./p. signal to these tubes, enabling the gain to be adjusted to register with the graticule at any time. The monitor is arranged as a bridging device, with parallel connected co-axial input and output jacks to enable it to be looped in series with a circuit, or it can terminate a line with a switched 75 ohm termination.

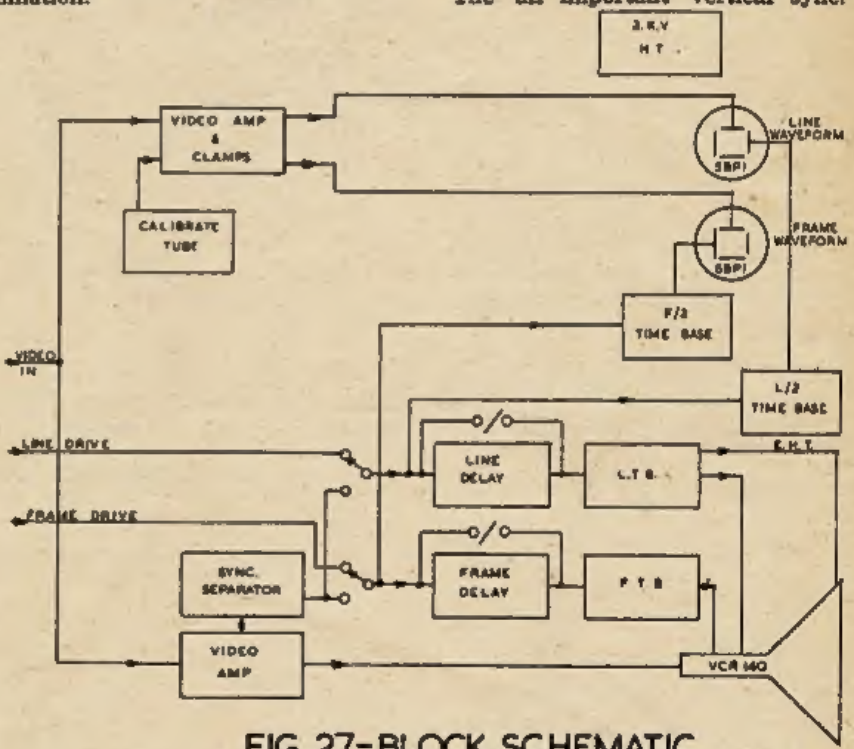


FIG. 27–BLOCK SCHEMATIC

Do not minimise the importance of accurate terminations at video frequencies. A mismatch caused by a 100 ohm termination on a 75 ohm line 15 feet long can be seen as ringing overshoots on the picture.

Pulse Cross Display

This facility enables a quick and easy check on the operation of the sync. generator. The monitor time bases are fed normally with driving signals from the sync. generator, and blanking and sync. are normally off screen, at top, bottom and both sides. For "pulse cross" the picture information is fed to the 12" monitor tube in the normal way, but the line and frame sync. signals are delayed about a half-line and half-frame respectively.

The half-line delay causes the line time base to trigger in the centre of the picture, bringing the line blanking and sync. area as a black bar down the screen centre. Similarly the delayed frame sync. pulses causes frame sync. and blanking to appear across the centre of the screen. These two bars form a cross, hence the name of the technique. See Fig. 28.

By increasing the screen brilliance, the picture information in the four corners goes toward full white and is ignored. The broad blanking bars come up to mid grey, with the sync. showing as black, within the blanking area. At the same time as the delays are switched in, the frame time base is heavily overdriven, greatly expanding the vertical deflection, and most of the picture goes off screen top and bottom. The all important vertical sync. and blanking area is now occupying a sizeable part of the screen centre, with the lines opened out, so that each is easily visible and individual lines and sync. pulses can be easily counted.

Referring again to Fig. 28, the vertical bar, delineating horizontal blanking and sync., shows a narrow grey bar at the left, the front porch, a wider black bar, which is horizontal sync., and a wide grey bar, the back porch. By superimposing a grating of vertical bars, from a grating (grid or cross-hatch) generator, these bars, whose spacing in time is known, can be used for accurate pulse width measurement.

I use a grating generator with ½ microsecond bars at 3.2 usec. intervals.

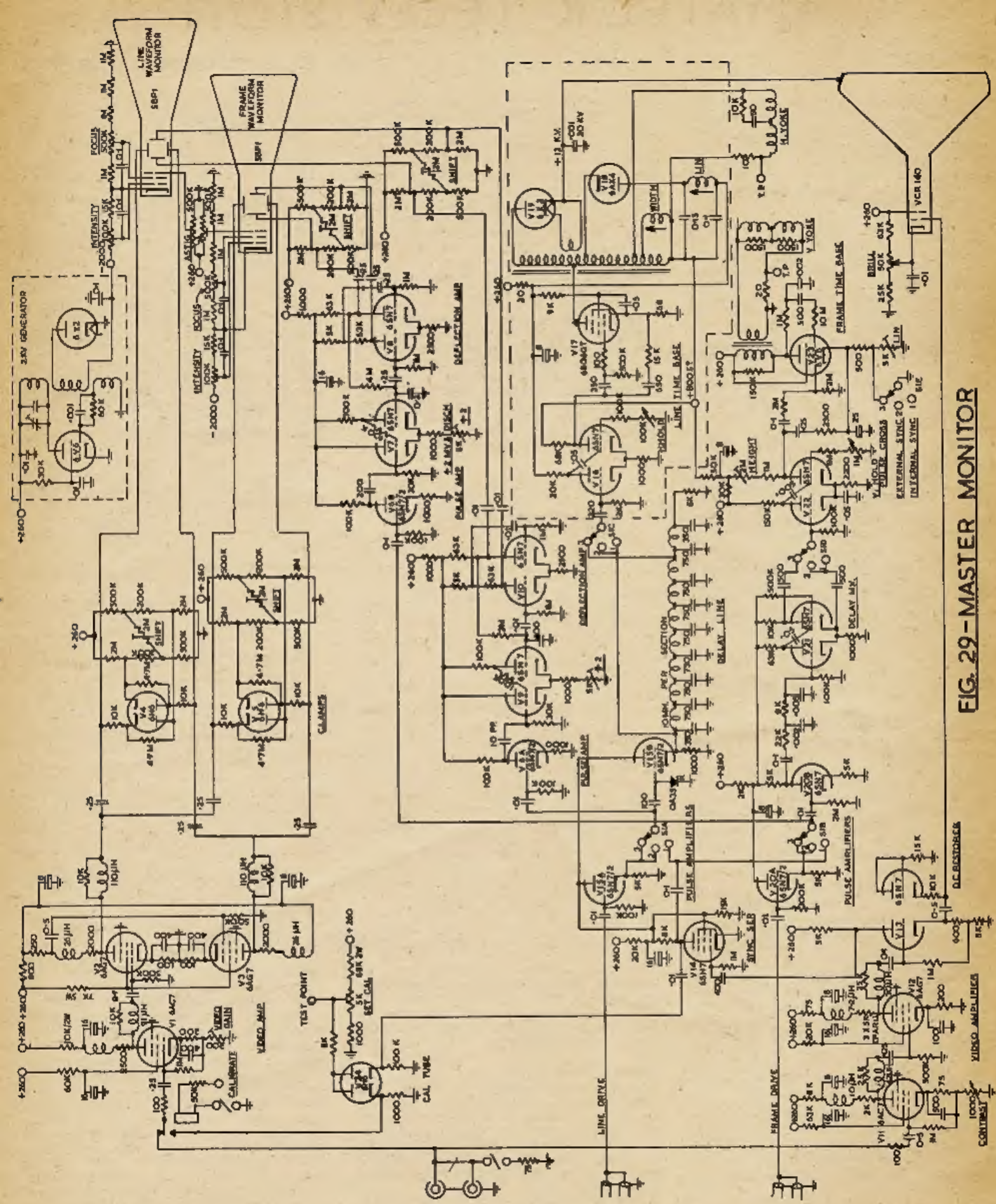


FIG. 29—MASTER MONITOR

Using engineer's dividers, it is easy to measure the width of the front porch, sync. and blanking widths, etc., with the superimposed 3.2 usec. bars as a measure of time. The sync. generator high frequency pulse circuits can then be adjusted for correct pulse widths.

Similarly the horizontal bar of the cross shows the vertical blanking interval. Referring to Fig. 28, the equalising pulses can be seen (black) above and below the vertical sync. blocks. The line structure is sufficiently open to count the number of equalising pulses, vertical sync. blocks, and the number of lines lost in vertical blanking.

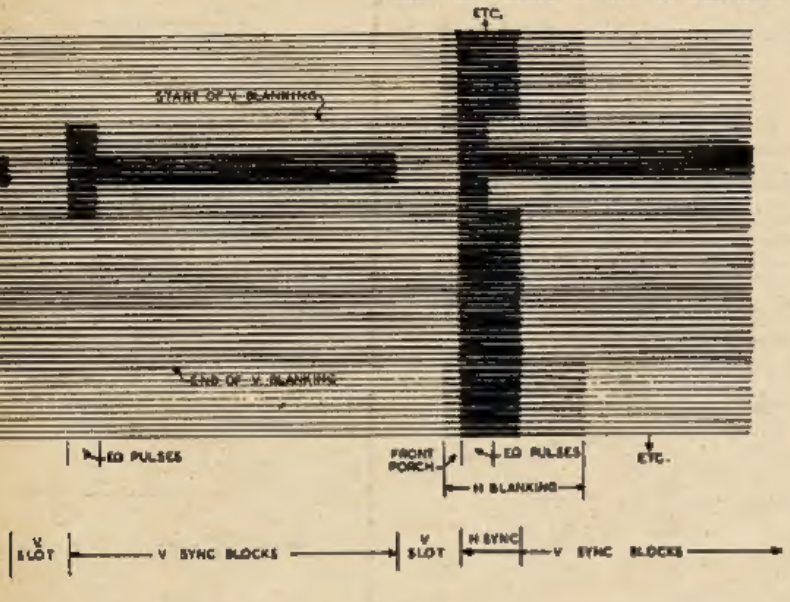


FIG. 28—PULSE CROSS DISPLAY

As both interlaced fields are displayed together, a total of 10 pre-equalising, 10 vertical sync. blocks, and 10 post-equalising pulses should be visible, half in line with horizontal sync., and half displaced by half a line. Also as both fields are displayed, there should be between 36 and 44 blanked lines in the vertical blanking period.

The Waveform Monitor

This consists of two c.r.t. displays with common video feed for vertical deflection, but differing time bases, in order that one shall run at half line rate, and show two lines (128 usec.), and the other at half-field (frame rate), and show two fields (40 millisecs.).

The video to the c.r.t. plates is clamped at sync. pulse tips, to permit register of the black level with the graticules. The response of the video amplifier is standard R.T.M.A. roll off, down 3 db. at 2 Mc. For optimum focus, balanced shift, and astigmatism controls are provided for both tubes.

A calibration tube, fed with line pulses, delivers pulses of precisely 1 volt p./p. to the video amplifier, via a relay when required, for calibration against the graticules. A test point is provided and when the d.c. voltage at this point is 10 volts measured on a v.t.v.m., an accurate 1 volt p./p. is present at the video amplifier input.

Picture Monitor

The VCR140 tube used has magnetic deflection and focussing. It has a double phosphor similar to the P7, and requires the same treatment as the 5FP7, a blue filter. A tube this size should also have a safety glass in front of it, and a dark blue Perspex is available, ¼" in thickness, which will serve both purposes.

The video amplifier feeds the picture tube grid via a cathode follower, to reduce capacitive shunting of the 6AG7 to a minimum, and retain bandwidth. The other half of the 6SN7 is used as a d.c. restorer, but a germanium diode like the OA61 would be suitable. The cathode follower also provides a convenient independent feed to the sync. separator.

The separated sync. can be used to synchronise the time bases, or they can be switchd direct to the vertical and horizontal driving pulses, which are looped into and out of the unit. A third position of this switch brings in the pulse cross delays, a delay line for line deflection, and a multivibrator for frame. The deflection circuits shown are fairly orthodox, with rather more care taken to preserve vertical linearity.

The Circuit

As most features in this unit have been covered for similar purposes in the units described earlier, the circuit (Fig. 29) should not need detailed description.

V1, V2, V3 are a video amplifier of appropriate bandwidth with gain sufficient to lift the 1.4 volt p./p. input to a level adequate to give 2" undistorted deflection on the 5BP1's at 2 kv. The 6AG7's are fairly fully driven, and some cathode peaking (400 pF.) is needed to maintain bandwidth, with the anode loads needed for adequate deflection. Individual 6H6 clamps (V4 and V5) clamp at the sync. tips at the c.r.t. plates, with balanced shift potentials acting through them.

The calibrate tube V24 receives negative high amplitude line pulses on one cathode from the sync. separator, which causes this tube to conduct heavily, bringing the anodes to earth potential, which cuts off the other half tube. A negative pulse then appears at the second cathode, of value preset to 1 volt p./p., determined by the anode d.c. potential. A relay is used for switching its output, because of the difficulty of mounting the switch close to the switching point, while having front panel control.

The waveform monitor time bases receive negative pulses from the sync. separator, or driving pulses as selected, the amplifiers V6A and V6B serving also to prevent half frequency kick back from the divide-by-two multivibrators, from causing erratic interlace in the picture monitor time bases. Each of these divide-by-two multivibrators (V7, V9) delivers a sawtooth to its respective deflection amplifier (V8, V10) for each horizontal display. Balanced shift controls again are used on the deflection tube plates.

Due to the proximity of the two electrostatically deflected cathode ray tubes to the magnetic deflection components of the picture monitor, some magnetic cross-talk may occur. Double concentric shields of 24 gauge g.i. around each 5BP1, and a sheet of 16 gauge b.i. between the upper picture monitor chassis, and the lower waveform monitor, reduces it out of sight. Magnetic fields from nearby power transformers will, however, cause trouble. For this reason, among others, the power supply is a separate unit and normally placed 2 or 3 feet below the monitor.

These two c.r. tubes require 2 kv. e.h.t., which is generated by a standard r.f. e.h.t. supply, using a 6V6 as oscillator, standard c.r.o. type oscillator coil, such as the "Aegis" M23, with a 6X2 as rectifier. This last is used as it is small enough to mount inside a 3" diameter shield can in which the coil is placed. The whole of the e.h.t. generator **must** be shielded, as the oscillator operates at about 1 Mc., at about 4 watts output, and must not radiate into the video circuits nearby. Simple shielding, the coil can, and a metal 6V6 leaves nothing detectable.

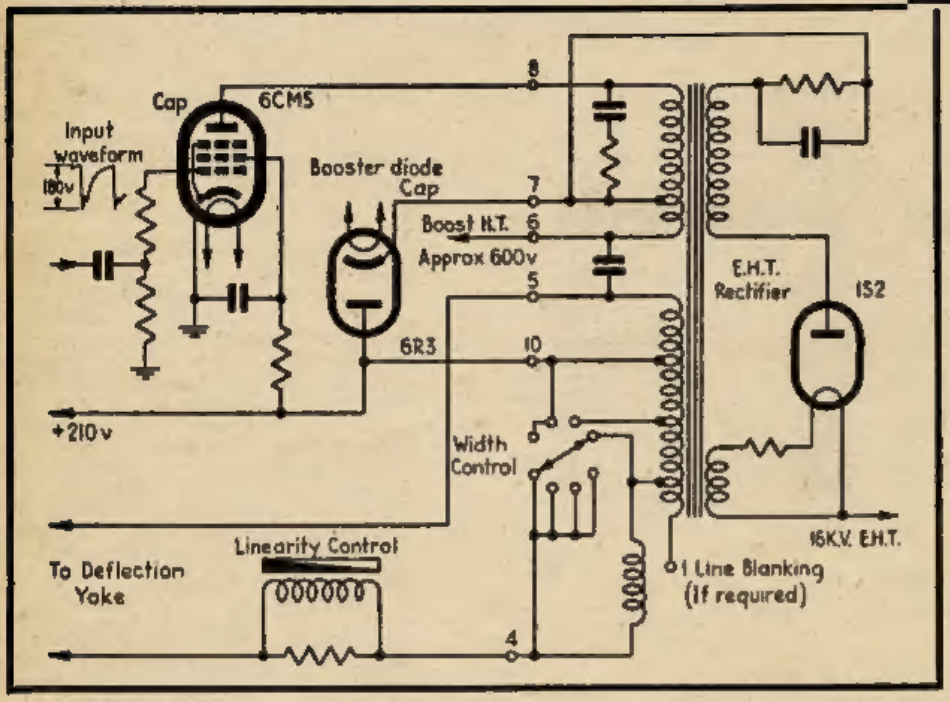
The picture monitor receives the same 1.4 volt p./p. video input to a two-stage video amplifier (V11, V12). The bandwidth of the 6AC7/6AG7/6SN7/2/VCR140 grid circuit is flat to 6 Mc. This wide bandwidth is an advantage, as the picture tube is big enough to use for fault finding, and will resolve 6 Mc. with ease. The otherwise unused anode of the 6SN7 cathode follower V13A feeds a 6SH7 sync. separator V14.

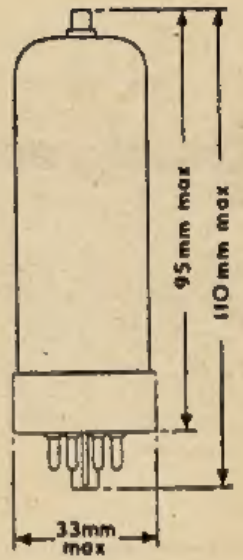
The separated sync. output from this tube is then available for the time bases, via the switch S1, which enables internal or external sync. to be used, and also switches in the pulse cross delays. V15B drives the delay line and the undelayed input to the line, or its delayed output, is used to trigger the picture tube line time base V16, V17, V18, V19.

The delay line is made similarly to that described for the sync. generator, but the 10 mH. pies consist of 800 turns each of 39 B. & S. silk-enamelled wire, single wave wound on a ½" former, 3/16" wide, at ⅝" centres. These need not be wave wound, you could

Mullard
TELEVISION VALVES

6CM5
LINE OUTPUT PENTODE





6CM5 CHARACTERISTICS

Heater ratings — *6.3V at 1.2A*

TYPICAL OPERATING CONDITIONS 90° DEFLECTION

Anode Voltage Supply (alternative Voltages)	200V	225V
Anode Voltage Boost	460V	472V (Approx.)
Total D.C. Supply	660V	690V (Approx.)
Screen Grid Voltage	200V	225V
Grid Input Voltage (pk to pk)	145V	145V
Anode Current (D.C.)	110mA	85mA
Screen Current (D.C.)	30mA	28mA

The 6CM5 is a television line output pentode having anode and screen dissipation ratings of 10 watts and 6 watts respectively. Peak anode voltage ratings of 7.0 kV positive and 3.0 kV negative together with a peak anode current rating of 350 mA ensure its suitability for 90° deflection systems with EHT voltages of the order of 18 kV. The reserve margins available ensure long service life. Additional data is available to design engineers on request.

Octal Base

Mullard

ISSUED BY THE TECHNICAL SERVICE DEPARTMENT M61X

MULLARD-AUSTRALIA PTY. LTD., 35-43 CLARENCE ST., SYDNEY, BX2006, & 592 BOURKE ST., MELBOURNE, MU2366
ASSOCIATED WITH MULLARD LTD., LONDON, MULLARD EQUIPMENT LTD., MULLARD OVERSEAS LTD.

try ¾" deep by 3/16" wide slots on a 1¼" former, and scramble wound. The cutoff frequency of this line is about 110 Kc., so the delayed line pulses taken from it will be fairly distorted, but quite satisfactory for triggering the time base.

Frame delay is accomplished in V21, which delivers an output pulse of about 10 msec. duration, negative at cathode, positive at anode of V21B, leading edge coincident with the incoming trigger. Differentiating from the cathode gives an undelayed negative trigger for normal operation, and from anode, a delayed negative trigger for "pulse cross" operation.

The frame time bases V22, V23 are in a reasonably orthodox circuit with feedback linearity components from grid to anode of V23. On "pulse cross", the cathode linearity potentiometer is short-circuited, giving vertical sweep expansion. The poor vertical linearity under these conditions is not important.

Construction

Layout is again conditioned by the tubes used, and the space they occupy. My waveform monitor has the two 5BP1 tubes side by side with the edgelit graticule in front of the pair. Between the two are the two time-base hold controls (+ 2), Set Cal. and Video Gain controls, with the calibrate switch mounted centrally. These five are covered by a removable panel. The pairs of focus and intensity controls are panel controls, the whole waveform unit being 14" wide and 5½" high.

All tubes are mounted horizontally on a vertical chassis near the rear, level with the c.r.t. sockets. This lower chassis has a 16 gauge mild steel upper plate for shielding and this supports the upper unit, the picture monitor.

The graticule is a 5" strip of ⅛" perspex, almost full width. The graticule divisions and designations are engraved on rear with a sharp steel point, the figures being done with a scriber through a "Uno" pen stencil. Shrouded lamp enclosures, as fitted to radio receiver dials, enclose each end of the perspex and provide edge lighting.

The picture monitor tube takes up most of the upper panel space but leaves room for the six controls—Contrast, V. Hold, H. Hold, Brill., Focus, and the Int./Ext./Pulse Cross Switch S1. These are all operated by extension shafts, and are mounted on another vertical chassis near the picture tube socket, and cut away for the tube neck. This chassis mounts the video, sync. separator and delay circuits.

The picture tube time bases are in separate boxes, line at left, frame at right, in the space alongside the yoke and focus assembly. The 2 kv. e.h.t. generator for the 5BP1's is mounted in the frame time base compartment.

The waveform and picture monitor units may be separated and are interconnected by plugs and sockets. Removable vented side doors allow access to the preset Shift, Height, Width and Linearity controls, at the sides of the time base units, and also on the lower deck, the Shift and Astigmatism controls for the waveform monitors.

The overall dimensions are set by the tubes used and, as the VCR140 is very long, about 24", the unit is rather large, 14" wide, 18" high and 26" deep.

For those using octal based tubes, I suggest that Carr Fastener moulded octal sockets be used for this work, as these have four earth lugs on each mounting clip, which are invaluable, not only for component termination, but as clips for holding filament and other non-signal wiring.

Simplifications

The waveform monitor section can be halved, using only one c.r. tube, time base and video clamp, with switching for line/frame selection. The calibration circuit can be omitted completely. By omitting the pulse cross display, and always running the monitor from driving pulses (this is standard practice), the sync. separator V14, and also V15B, V20B and V21, can be omitted without impairing the performance otherwise.

Power Supply

This is series regulated, delivering 260 volts at 350 mA. No negative supply is needed. For the waveform monitor c.r. tubes, a separate well insulated filament supply will be needed, as the cathodes are near —2,000 volts to earth. The same winding will serve for both tubes. The VCR140 needs a 4-volt 1 amp. winding, and the rest may be run from a 6.3-0-6.3 volt system, to keep heater current losses to a minimum, as over 14 amps. is needed at 6.3 volts. The circuit is shown in Fig. 30.

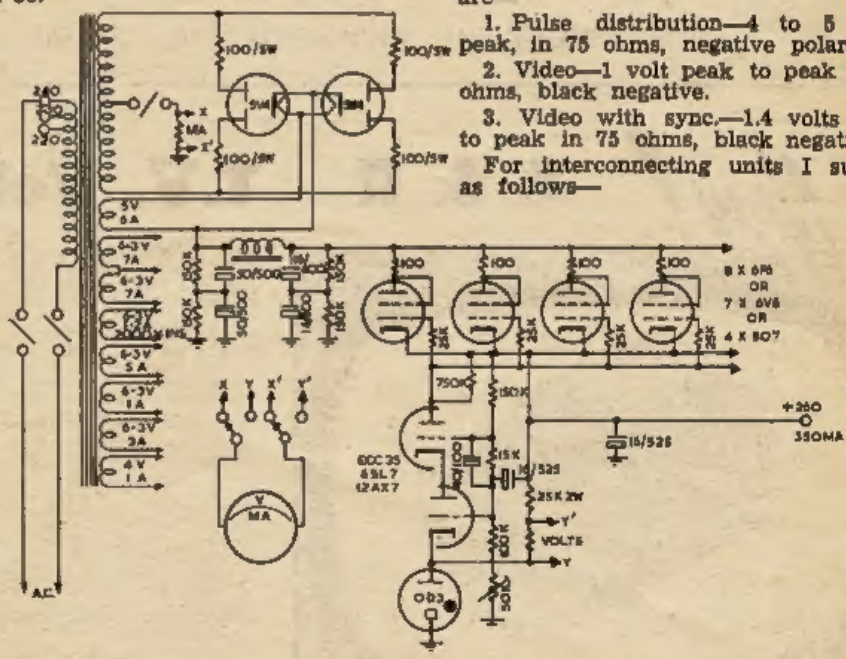


FIG. 30—POWER SUPPLY

For those who would make their own, the choke and transformer data is below.

Filter Choke—10 Henries at 400 mA.

Core stack 1½" x 2½" = 3.55 square inches.

Where volume of core = about 32 cu. ins., wind with 2,160 turns of 25 or 26 gauge B. & S. Air gap, 0.04".

Transformer—440 va. input.

Core stack 2" x 2½" = 5 square inches.

Primary, 1.9 amps., at 1.46 t.p.v..
220 volts—322 turns
230 volts—336 turns } 19 B. & S.
240 volts—351 turns

Secondaries at 1.58 t.p.v.:

(1) 400-0-400 = 632-0-632 turns 24 or 25 B. & S. d.t.e.
(2) 6.3-0-6.3 at 7 amps. = 10-0-10 turns 16 B. & S. (main fils.).
(3) 6.3 at 1.2 amps. 2,000 volts ins., 10 turns 22 B. & S. (5BP1's).
(4) 6.3 at 5 amps., 10 turns 16 B. & S. (regulators).
(5) 6.3 at 1 amp., 10 turns 22 B. & S. (regulator amp.).
(6) 6.3 at 3 amps., 10 turns 19 B. & S. (spare).
(7) 4 volts at 1 amp., 6 turns 22 B. & S. (VCR140).
(8) 5 volts at 6 amps., 8 turns 16 B. & S. (5V4's).

This completes a description of the camera chain proper, and at this point it seems relevant to discuss standards for Amateur Television.

STANDARDS

For complete flexibility of interconnection of equipment, both within your own chain, or with equipment belonging to others, standards of polarity, amplitude, impedance and connectors is adviseable. Many of the standards have been formulated and adopted by profesional television, and can be used by us with profit. These are—

1. Pulse distribution—4 to 5 volts peak, in 75 ohms, negative polarity.
2. Video—1 volt peak to peak in 75 ohms, black negative.
3. Video with sync.—1.4 volts peak to peak in 75 ohms, black negative.

For interconnecting units I suggest as follows—

1. **Pulse distribution**—6-pin Amphenol female outputs, male inputs, connected as follows:

Pin 1—Line drive
2—Earth
3—Blanking
4—Sync.
5—Earth
6—Frame drive.

Amphenol type plugs and sockets will accept four light (3/16") coaxials, which should be twisted together tightly before termination.

(Continued on Page 14)

The C.H.L. Modulation System

An entirely different approach to Constant High Level Modulation of Pentodes and Tetrodes, particularly suitable for v.h.f.'s

BY D. C. HABERECHT,* VK2RS

INTRODUCTION

In an effort to improve the effectiveness of modulation on the v.h.f. bands where one very often has to strain his ears to read phone either under difficult conditions or over great distance, the writer has experimented with many different systems. The two most effective types are, firstly, very heavy plate and screen modulation (around 200% modulated), or secondly, the system about to be described.

Very heavy plate modulation is very effective, however the requirements are fairly great, both from the difficulty in obtaining the heavy duty components necessary and of course, which to many of us is more important, the cost is particularly demanding, whereas the C.H.L. system's requirements are quite modest by comparison, any normal modulator capable of delivering 30 watts or so of power will be quite adequate. The actual results of this system are at the very least equal to high level plate modulation (around 200% modulated) and in many instances are considerably better.

This system does not claim to produce broadcast quality, in fact when working to full effect, the distortion percentage is comparatively high, however the readability is still maintained. To some extent the quality of the signal at the received end depends on the a.v.c. action of the receiver. It is better to operate without a.v.c. for this purpose.

ADVANTAGES

The advantages are many, perhaps the greater of these is the simplicity throughout, comparatively the components are few and less costly, adjustment of operation is simple and quite easily effected without the need of expensive testing equipment.

One other advantage of equal importance is the fact that considerably more output can be derived from a final tube or tubes than the manufacturer's ratings state. This, of course, is due to the fact that we can run higher plate voltage and plate current on voice peaks because the final is completely voice controlled and therefore only passes current when modulated. As a matter of interest it is possible to run an 832 with 750 volts anode and an average anode current as accorded by the meter of 60 mA. The peak anode current will reach around 100 mA., which if it were allowed to remain at a constant 100 mA. would definitely ruin the valve. However, as this is only reached on voice peaks, no damage will result.

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It will be seen from this that it is desirable to avoid wherever possible any form of continuous modulation, such as tone or a sustained whistle, not forgetting that illusive fellow called feedback.

It is interesting to note that when a sustained note of short duration is applied, there will be a trailing off of output from the time the note starts until the condition of a normal output is reached and will remain constant at this only if the p.a. is not operating under increased ratings. If the ratings are grossly exceeded, as was the case with the 832 described earlier, damage will then result to the tube.

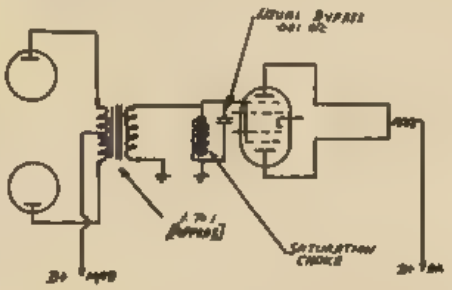
Other advantages are:

One of the few arrangements where it is possible to record greater power output than input as measured by plate current meter.

Simplifies the mobile or portable modulator problem, and conserves battery drain both in the p.a. and the modulator.

Non-critical in adjustment, tune as for a.m.

Has the advantage of carrier control.



C H L MODULATOR

To control power output, simply use the gain control on the modulator. Thereby it is possible to reduce the input for that cross-town QSO and help alleviate the QRM position (in the cities).

M.c.w. can readily be used to advantage. Keying can then be done in an audio oscillator, thus preventing key clicks and high voltage or heavy current keyed circuits. (If you can introduce a controlled amount of audio or r.f. feedback, this can be put to good use for m.c.w.)

There is always a safety measure with C.H.L. Irrespective of grid drive, the plate will not draw current until modulated.

Power supply requirements are modest, provided a husky output capacitance is used in conjunction with a normal pi-section filter it is possible to draw up to 50% greater power than is possible with a.m. Regulation should of course be fairly good, hence the reason for the husky filter condensers. A suggested value of capacitance for input "C" 16 μF., for output "C" 24 μF.

These are, I feel, most of the advantages. The main disadvantage is the fact that initial tuning up is made difficult unless a double pole switch can be arranged to bring in d.c. voltage to the screen for tuning up purposes.

OPERATION AND ADJUSTMENTS

Looking at the circuit you will find that there is no d.c. screen voltage whatsoever, the screen voltage is purely audio voltage; or in other words, an a.c. voltage varying at audio frequencies. This average voltage level as measured with an a.c. voltmeter is adjusted under normal speech to a value of 75% of the normal d.c. screen voltage; increasing the developed voltage above this point will only cause excessive screen dissipation without increasing the output.

The method of adjustment is perhaps a litle unusual. First, check the output of your modulator; make sure that it is capable of delivering about 20 to 25 watts, assuming a 100 watt final, or proportionately less for lower inputs. Then connect the modulator to your final, check the developed screen voltage at various settings of the gain control. If the choice of the saturation choke is correct, it will be possible to maintain the correct average screen voltage over a range of audio settings from about 10 watts to 25 watts, dropping off as the audio level is decreased below 10 watts.

Should the screen voltage continue to rise as the audio level is increased, the saturation choke should be substituted for another. Actually the writer has used a wide variety of chokes, including power transformers, old audio chokes, audio transformers and speaker transformers with equal success, so you will not find it difficult to achieve the desired results. Do not attempt to operate the final without this choke as the developed screen voltage will be much higher than necessary, even with a small amount of audio.

It can be seen from this that not only do we provide the necessary screen voltage to set the final in operation, but in addition to this we supply audio power which provides a pulse to the screen, is amplified by the valve and fly-wheel action of the final so that a developed pulse in the plate of somewhat greater proportion appears in the tank circuit.

It should be mentioned here that unlike normal screen modulation, the

aerial coupling is adjusted loosely, as too much coupling will tend to reflect a damping load. This, of course, will tend to restrict the peak plate power developed, thereby impairing the effectiveness of the system.

The best point of operation on the valve curve is as for a plate and screen modulated final. However, considerably less grid drive can be used without effect. There appears to be very little difference in the output and quality, even if the drive is reduced to half of manufacturer's ratings. This is also quite a considerable advantage in cases where difficulty is experienced in getting the required drive, such as in portable and mobile equipment.

One other point to consider is the final tank circuit itself. Here it is desirable to obtain the greatest practical "Q", for 2 metres and higher a pair of Lecher lines is suggested. It is also desirable to have a near flat feedline as far as standing waves are concerned, this, however, is not imperative.

This system has been used to equal effect with a number of final valves, such as 832, 832A, 829, single and parallel 807s and 5763

In conclusion, a word of warning. It is not desirable to use C.H.L. on the lower frequencies with very heavy modulation, although I have not known the system to cause sideband splatter, it does develop an extension of bandwidth particularly if the receiver used incorporates a.v.c.; this sideband extension possesses some rather unusual characteristics not unlike double-sideband. It does not follow that this system is of no use on the lower frequencies, in fact when operated correctly without excessive modulation, the quality can equal that of any of the better known forms of screen modulation, as has been evident from the tests conducted on 80 metres with a modified AT5.

The writer would be pleased to hear from anyone who may use the C.H.L. method or anyone who may have read or heard of the use of this method in days gone by. So far as I have been able to ascertain there has been no known use of this system and I am particularly interested to know whether it has been used either as described here or in any other form.

One final point not mentioned beforehand is the suggestion that a small amount of volume compression in the modulator can be quite a help in maintaining a constantly high level of output.

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OVERTONE CRYSTAL OSC.

(Continued from Page 2)

general use. As in the other circuits, the LC circuit should resonate at three times the crystal frequency. This circuit behaves in a slightly different fashion to the other two circuits. When just switched on, it should commence oscillating at the fundamental frequency of the crystal with a strong third harmonic output. When the LC circuit is tuned to the correct frequency, oscillations at the fundamental frequency should cease, and only oscillations at the harmonic should be maintained.

In all circuits, the actual frequency of oscillation will not be an exact multiple of the frequency marked on the crystal, but will be a multiple of a freqeuncy 5 to 10 Kc. lower than the marked frequency. This is due to the fact that series resonance is being used, and to some extent, also to the mode of oscillation of the crystal.

Some idea of the possible harmonic activity of a crystal may be gained by joining a small coupling coil to the pins of the crystal holder, and then dipping it with the g.d.o. tuned to the harmonic frequency. A good dip indicates good activity, and vice-versa.

Crystals with good activity may be used on the fifth harmonic with the same circuits and adjustment procedure. However, operation at the fifth harmonic is more critical than operation at the third. Special circuits have been devised for operation at the higher harmonics, some of them achieving a high order of multiplication. A good article on this subject appears in "QST" for April, 1951.

R.D. CONTEST

R.D. Contest time is around again. Make a note on your calendar to keep the 16th and 17th August free so that you can participate in this popular Contest.

As some confusion apparently exists on the use of c.w. and phone, it is suggested that you again **peruse the rules** published on **page 11** of the **June** issue of "A.R." and **especially the comments** on the rules on **page 24** of the same issue under the heading of Federal Contest Committee.

288 Mc. Crystal Controlled Converter

BY J. L. OCCOLOWITZ,* VK3ZAI

TO make best use of stabilised signals on the 288 Mc band a narrow band receiver is necessary. The superregenerative receiver which is so often used on this band is far too broad for crystal controlled signals which may only occupy a bandwidth of 6 Kc., although it finds use in copying unstabilised signals which may be 500 Kc. or more wide

The converter described below should be used with a broadband i.f. if it is desired to copy unstabilised signals, although some unstabilised signals have been copied with difficulty using a BC348 as the i.f. receiver.

TUBES

Triodes are necessary to obtain suitable ratios at this frequency. Some tubes which can be used in grounded grid service are 6Q4, 6AM4, 6AJ4, 417A and 6J4. However, these tubes are either not readily available or are fairly expensive.

The value of twin triodes used in cascode circuits at 144 Mc. is rather doubtful at this frequency and no reports have been received as to their suitability.

In order to compromise between expense and performance, a neutralised push-pull 6J6 amplifier was chosen and a push-push 6J6 mixer used. If desired, signals may be fed straight into the mixer with some loss in performance, though on stabilised signals even this gives better performance than a superregenerative receiver.

CONSTRUCTION

The converter was constructed on a 10" x 6" x 2½" aluminium chassis. The tubes for the crystal multiplier chain are mounted above the chassis, whilst the r.f. amplifier and mixer tubes are mounted 4" apart, upside down, with the pins of the sockets projecting above the chassis. In this way all of the multiplier chain wiring lies below the chassis and all of the amplifier and mixer wiring, except for the output coil, lies above the chassis.

The oscillator injection line was mounted on small ceramic feed-through insulators obtained from an old compass receiver coil box. A shield 2½" x 1½" is soldered across the r.f. amplifier socket, isolating pins 1 and 2 from the others, and is earthed to the socket mounting bolts. Two holes ¼" apart are drilled just above the socket spigot to pass one side of each of the neutralising twin leads. The ends of the lines are bent inwards to make contact with the socket pins and are tilted downwards so that the lines lie outside of the plane of the chassis.

As a starting point the antenna coupling loop should be coupled tightly to the amplifier input line. The amplifier and mixer lines spaced about 5/16" one above the other, and the oscillator injection line placed between the mixer line.

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SPURIOUS SIGNALS

Since this converter has been constructed some bother has been found with spurious beats from unwanted frequencies in the frequency multiplier chain. As an improvement, it is suggested that the whole of the frequency multiplier chain, including the crystal, be shielded and all power leads be brought through the shield via r.f. chokes and ceramic feed-through condensers. The injection frequency should be link coupled through a co-axial connector through the shield.

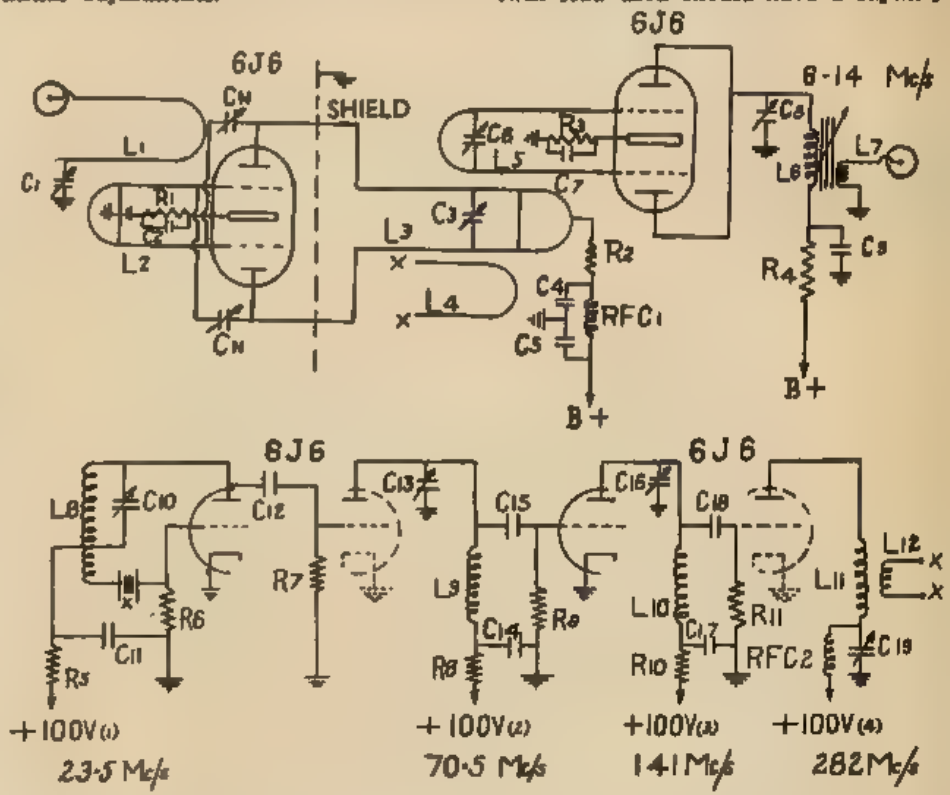
Similar treatment to this on a 50 Mc. crystal locked converter completely eliminated spurious response due to mixing with Channel 3 video signals.

ADJUSTMENTS

A grid dip oscillator/absorption wave meter makes adjustment of the multiplier chain simple and is also useful as a signal source on 288 Mc. for the initial adjustments.

After wiring and checking, apply filament volts and connect h.t. to point 1 through a 0-50 mA. meter. Tuning C10 should produce two dips corresponding to the 3rd and 5th overtone of the crystal. The 3rd overtone oscillation should occur with the condenser more than half in mesh. Check the frequency with a wavemeter and if possible the stability on a receiver. With h.t. on points 1 and 2, tune C13, for maximum r.f. on 70.5 Mc. Similarly with h.t. on points 1, 2 and 3, tune C16 for maximum r.f. on 141 Mc. The doubler stage to 282 Mc. should be tuned for maximum r.f. with h.t. on points 1 to 4.

Remove h.t. from the multiplier stages and apply to the r.f. stage only, lift the end of the r.f. amplifier input line from earth and temporarily bypass this point to earth with a 1,000 pF. disc ceramic condenser and connect a micro-ammeter from the bypassed point to earth. The neutralising twin lead used should have a capacity



C1, C3, C6—30 pF. concentric air trimmers.
C2, C4, C5, C7, C9, C11, C14, C17—1,000 pF. disc ceramic.
C8—30 pF. trimmer.
C10—50 pF trimmer.
C12—47 pF. ceramic.
C13, C16—1½ to 8 pF. ceramic tubular t.v.
C15, C18—25 pF. ceramic.
C19—approx. 5 pF. trimmer.
R1, R3—150 ohms composition (non-inductive) ½ watt.
R2—220 ohms, ½ watt.
R4, R5, R8, R10—1,000 ohms, ½ watt.
R6—10K ohms, ½ watt.
R7—100K ohms, ½ watt.
R9, R11—47K ohms, ½ watt.
L1 to L5—See Table.
L6—No. 28 B. & S. enamel wire, 65 turns on ½ inch slug-tuned former.
L7—10 turns No. 28 B. & S. wound over cold end of L6.
L8—12 turns 18 B. & S. enamel, 5/8 inch dia., 1¼ inch long, tapped 3½ turns from [redacted] end.
L9—9 turns 5/16 inch dia., 5/8 inch long, No. 22 B. & S. enamel.
L10—3 turns 3/8 inch dia., 3/4 inch long, No. 22 B. & S. enamel.
L11—4½ turns 5/16 inch dia., ½ inch long, No. 22 B. & S. enamel.
L12—1 turn insulated link in L11.
X—Xtal 23.5 Mc. on 3rd overtone.
Cn—Lengths of close-spaced twin lead, approx. 1.8 pF.
RFC1, RFC2—I.F.F. type r.f. chokes.

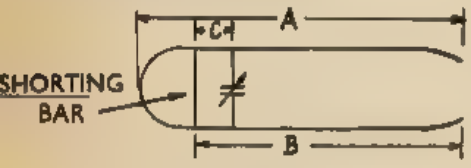
of about 3 pF. per section before pruning. Initially there will be fairly high current indicated on the ammeter due to oscillation in the amplifier. Carefully prune each lead by equal amounts until the grid current is nearly zero and make the final adjustment by splitting the twin lead partially and splaying or twisting tightly until the current is zero

With neutralisation of the amplifier completed, apply h.t. to all stages and connect an antenna. Tune the r.f. stages for maximum noise and peak the i.f. output coil. It may be necessary at this stage to re-check neutralisation, tuning the i.f. receiver over the band should reveal no signals whose b.f.o. note can be changed by bringing a finger near the r.f. amplifier.

The choice of i.f .frequency for this converter was dictated by the availability of a 23500 Kc. 3rd overtone crystal which had been used in other gear. The use of a higher i.f. should produce a more uniform response from the i.f. stage.

TABLE

L1, L2, L3 and L5 are made from No. 14 tinned copper wire, spaced ¾" centre to centre. L4 No. 18 enamel ¼" centre to centre, 1" long.



Approximate Line Dimensions

Line	A	B	C
L1	2¾"	—	—
L2	2¾"	1⅞"	—
L3	3¾"	2½"	3/16"
L4	2¾"	—	⅜"*
L5	2¾"	—	—

* From end of line.

The position of shorting bars and trimmers may have to be altered during initial tuning.

DOUBLE CONVERSION PLUS

BY "SCOTCH"

Here is a scheme which will bear thinking about since it will achieve the simplest means for double conversion that I have been able to discover so far, in fact one might even go so far as to misquote that this is a case of "man's mind is greater than his pocket!"

By the choice of a first i.f. of 12 Mc.-16 Mc., and an 8.8 Mc. crystal frequency, it has been possible to achieve a design that even Charles I, would have recognised as a money spinner.

Even the v.h.f. enthusiasts who seem to be able to build up converters for every band may be interested to see that 56-60 Mc. and 144-148 Mc. can be covered with the one crystal anyhow.

It is put forward as a scheme; you can work out the details of how to put it into practice. VK5GL gave me the idea for 56 and 144 Mc. and ground me the crystal. Thanks Clem.

Band	Crystal Oscillator Multiplier	Converter-Receiver Tuning Range	Comment
80 Metres	× 1 8.8 Mc.	3.50 Mc. — 3.80 Mc. 12.30 Mc. — 12.60 Mc.	Addition frequency.
40 "	× 1 8.8 Mc.	7.00 Mc. — 7.15 Mc. 15.80 Mc. — 15.95 Mc.	Addition frequency.
20 "	× 3 26.4 Mc.	14.00 Mc. — 14.35 Mc. 12.40 Mc. — 12.05 Mc.	In the i.f. range: extra second channel rejection by using converter.
15 "	× 1 8.8 Mc.	21.00 Mc. — 21.45 Mc. 12.20 Mc. — 12.65 Mc.	To be preferred: forward reading on the dial.
15 "	× 4 35.2 Mc.	21.00 Mc. — 21.45 Mc. 14.20 Mc. — 13.75 Mc.	Difference frequency. (not recommended)
10 "	× 5 44.0 Mc.	28.00 Mc. — 30.00 Mc. 16.00 Mc. — 14.00 Mc.	Difference frequency.
5 "	× 5 44.0 Mc.	56.00 Mc. — 60.00 Mc. 12.00 Mc. — 16.00 Mc.	Difference frequency.
2 "	× 15 132.0 Mc.	144.00 Mc. —148.00 Mc. 12.00 Mc. — 16.00 Mc.	

Note that 80, 40, 20, and 15 metres can be covered from the fundamental of the crystal. Two tubes can therefore provide the output from the crystal oscillator section.

HINTS AND KINKS

AN ALL-BAND R.F. CHOKE

Wind on 1" insulating rod or glass tube 7"–8" long. 4" close wound 22 B. & S. enamelled wire, leave ¼" space, then ten turns and ¼" space, then six turns and ¼" space, then 5 turns, and choke is complete.

—W. H. Hannam, VK3AXH.

A CHEAP SCRIBER WITH RENEWABLE TIPS

Old type, hardened steel gramophone needles are still readily available and these provide us with all the tips one will need throughout one's lifetime. Take a piece of brass rod, 3/16" welding rod is ideal, and drill a 1/16" hole in one end. A lathe is helpful for this but not absolutely necessary. The gramo. needle is then soldered into the end of the rod. When the point becomes blunted, it is only necessary to solder in another needle.

—S. T. Clark, VK3ASC.

BC221 AS A CARRIER INJECTION GENERATOR FOR S.S.B.

Although already appreciated by many Amateurs, newcomers to the ranks of s.s.b. operation may not realise that a surplus BC221 Frequency Meter makes an excellent signal frequency carrier generator for reception of single-side-band suppressed-carrier phone signals.

Frequency stability and adequate band spread, essential requirements of an s.s.b. injection generator, are already built into the various models of the BC221. Output amplitude control over a wide range, another requisite of a good generator, can be provided for by replacing R38 (in Model 221-N) with a 500K potentiometer.

—M. R. King, KP4RC ("QST," Mar. '58)

TUNING RODS FOR I.F. TRANSFORMERS

Through the kindness of Denis ZL2ATO I was presented with a number of ¼" Polystyrene rods with 1/16" hole through them and 16" long. These are used in the dairying industry. I cut them in half and drilled a 5/32" hole at one end and ¼" hole at the other end, both ¼" deep. I then used a jeweller's saw across the holes and sawed down to just below 5/32" and ¼" holes, then I cut strips of tin out of a fruit can about 3/16" wide, bend one end (about 1/16") at right angles, slip into the slot and bend the other end, forming the letter Z, and cut off as close to rod as possible. Cement in place and repeat similarly at the other end. This leaves the knife edge of the tin about 1/16" below the level of the poly. rod and this made an ideal screw driver for i.f. tuning as the driver cannot slip off like an ordinary screwdriver.

—W. H. Hannam, VK3AXH.

AUDIO FREQUENCY TEST SIGNAL WITHOUT AN AUDIO OSCILLATOR

If an audio generator is not available when next needed, or should the one on hand deliver inadequate or badly distorted output, try the system used here at W2ZZG.

A good sine wave, as indicated by an oscilloscope, is obtained by feeding the v.f.o. signal into a communications receiver operated with the b.f.o. turned on. Audio output for test purposes is taken from the last stage of the receiver, and the amplitude of the signal is regulated by the audio gain control. Signal frequency is varied by regulating the b.f.o. control.

Naturally, the stability of the v.f.o. and the receiver play an important part in determining the stability of the audio test signal. Furthermore, coupling between the v.f.o. and receiver should be tight enough to mask out any noise that leaks into the front end of the receiver, but not so tight as to overload its r.f. amplifier. By experimenting with the input coupling, and by keeping the r.f. gain down in the interest of linearity, it is usually possible to end up with an audio output signal that looks quite good on the face of a 'scope.

Although the equipment used here is not calibrated in terms of audio frequency, the frequency of the test signal can be intelligently estimated. In any event, the signal obtained is a lot more favourable for many jobs than is the frequently interrupted WWV signal used by some as a source of audio.

—A. H. Pedley, W2ZZG ("QST," Mar. '58)

FLUX FOR NICHROME AND NICKEL

The only flux which will solder nichrome or nickel is the following:

Aniline 51 c.c. Orthophosphoric Acid 34 c.c. Ethylene Glycol 40 c.c.

Grind Aniline and Orthophosphoric Acid together, add Ethylene Glycol. It should form a thin paste. If too stiff add more Ethylene Glycol until the right consistency is obtained. Use ordinary solder then wash off joint with methylated spirits as this flux is slightly corrosive.

—W. H. Hannam, VK3AXH.

TO MAKE RODS FOR CHOKES, ETC., WITH PERSPEX STRIPS

Place strips of perspex, the width and number to make up the necessary thickness, then put in a chloroform bath for ten minutes, seeing that a cover is placed over bath to prevent evaporation. Then press together and allow to dry, and you will have a clear bar of perspex which can then be turned to any diameter required.

—W. H. Hannam, VK3AXH.

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3WL	14	211	VK3BZ	3	176
VK6MK	43	206	VK6KW	4	168
VK6RU	3	207	VK3EE	10	163
VK1ATN	20	204	VK3DB	21	161
VK4FJ	21	203	VK4WF	16	160
VK4HR	12	192	VK4RW	23	157
New Members					
VK5XN	43	126	VK2AHH	41	120
Amendments					
VK4DO	30	128	VK7LZ	36	111

C.W.

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3KB	10	235	VK3XU	43	211
VK4FJ	28	234	VK3YL	39	203
VK3CX	26	230	VK5BY	45	202
VK3FH	15	226	VK6RU	18	194
VK3BZ	8	222	VK2EO	3	191
VK4HR	8	218	VK5RX	23	176
New Members					
VK2AHH	62	107			
Amendments					
VK7LZ	17	162	VK3RJ	43	128
VK4DO	30	128	VK6KW	40	109

OPEN

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK2ACX	5	250	VK3XU	61	221
VK4FJ	23	238	VK6MK	74	213
VK6RU	3	225	VK3JE	13	210
VK4HR	7	223	VK3ATN	69	210
VK3BZ	4	221	VK3HG	3	201
VK3WL	45	225	VK7LZ	23	201
New Members					
VK2AHH	73	151	VK3HL	75	117
Amendments					
VK6KW	13	188	VK4DO	15	189

MEET THE OTHER AMATEUR AND HIS STATION

HANS F. RUCKERT, VK2AOU

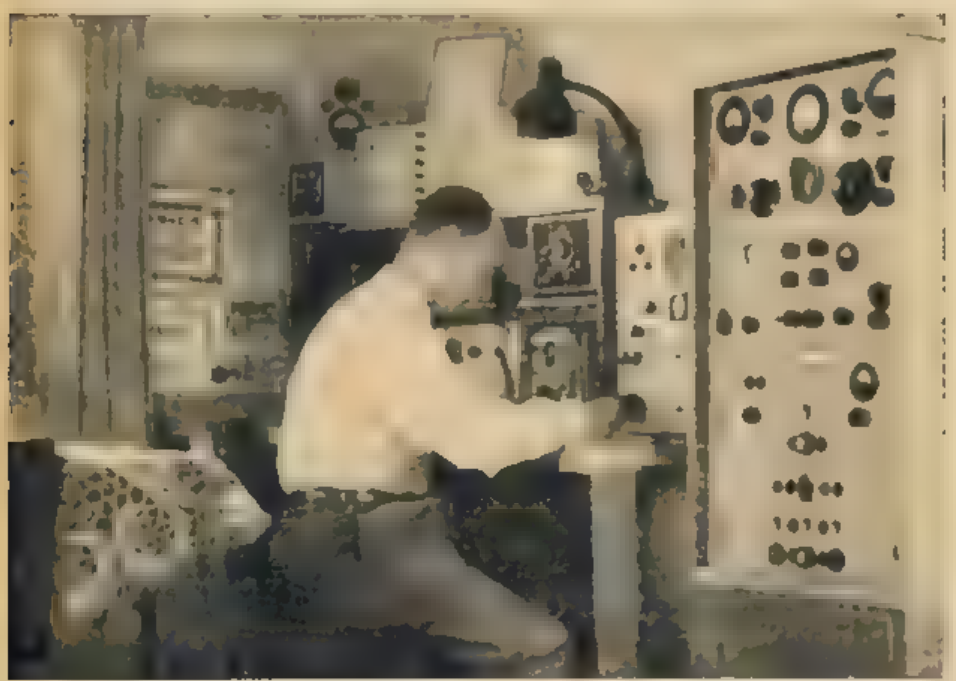
MY interest in electronics goes back to 1924 when I first heard a radio transmitter, but I did not start earlier than 1930 to build my first short wave receiver when we had science lessons at high school. Later in 1934 the teacher left it to me to lecture a few physics periods on radio. The physics honour paper for the leaving examination had the following title: "The problems of short wave communications receivers." It contained 80 pages of text, typed, and circuits. Here the double conversion superhet was described, 15 years before it became popular.

In 1936 the German short wave listener examination was passed (half a lis examination) and the DE3562 number received. Later, during my university time in Berlin, I was technical adviser for district C and gave many lectures on receiver design. I also worked often at the lab. of the hq. of the D.A.S.D.

During the last 20 years about 80 technical papers have been written for eight radio magazines, but mainly for the "DL-QTC" and "Amateur Radio." The first paper reported on short and long path receiving tests made during VK-ZL Contests, 1936 to 1938.

Achievements obtained include:

4th Prize Receiving Contest, 1947, 2,000 Amateur Stations logged.
1954 D.A.R.C. Honour Badge with VK-2AOU call, for 20 years of service to Amateur Radio.
W.B.E. (c.w.), W.A.E. and R.C.C. (after long t.v.i. discussions with Phil Rand).
1955 1st Prize W.A.E.D.C. for VK2 20 Metre Phone.
1956 1st Prize VK-ZL Contest for VK 20 Metre Phone.
1957 1st Prize VK-ZL Contest for VK2 10, 15 and 20 Metre Phone.
1956 VK Prize for "A.R." contributions.
1958 "Adams Trophy", VK2.



My 12-valve short wave receiver was exhibited at the great Radio Fair in Berlin, 1939. Even so, I could not get a transmitter licence, the number of which was limited to 500, until 1949 when 700 licensees were issued in March, partly due to the influence of W and G occupation authorities.

The first DL1EZ was immediately on the air hunting DX. 110 countries were worked and 92 confirmed (phone) when we decided to follow the invitation to go to VK2 in June 1951, after some important VK2-DL QSOs. One year later I was back on the air as VK2AOU. Among the now 113 countries worked (phone) and 90 confirmed are many old friends contacted before from the other side of the globe.

*25 Berrille Rd., Beverly Hills, N.S.W.

The station is in the dining room. There is no surplus gear or a junk box. The photograph shows (from right to left):

(1) 100w. transmitter, 10 to 80 metres, bandswitching and shielded, 6 to 9 stages, plate and screen modulated final with clipper filter and monitoring c.r.o.

(2) 19-valve Amateur-band receiver, 5 r.f. tuned circuits, 7 on the 1st i.f. of 5.3 Mc. and 9 on the 2nd i.f. of 352 Kc. plus two crystal filters in series; six bands: 80 to 6 metres.

(3) BC221 and, underneath, e.c.o. frequency meter.

(4) 9-valve superhet receiver, 3.4 to 54 Mc., xtal filter.

(5) G.d.o., 1.4 to 210 Mc.

(6) Absorption frequency meters: 150 Kc. to 60 Mc., 16 to 255 Mc.

(7) Two universal regulated power supplies for tests.

(8) V.h.f. field strength indicating receiver, mainly for t.v. channels.

(9) Universal measuring apparatus "Farvimeter": a.f. and r.f. signal generator, log v.t.v.m., V., mA., Ohm, C and L meter with many ranges.

(10) Two multi meters.

Components are sorted out in groups, so no time is wasted when looking for bits and pieces, and placed in labelled cartons or boxes.

QSO index card system, 2,500 QSOs made, 65% QSL efficiency. Most of the time is spent with experiments.

Aerials: A triband beam, own design, for 10, 15 and 20 metres, 44 feet high, a 140 ft. Zepp for 80 and 40 metres.

Member: W.I.A., D.A.R.C. and the A.R.R.L.

Profession Research engineer, mainly electronic ceramics like capacitor dielectrics, etc. Amateur Radio has always been my main source of electronic experience.

Other Hobbies: Classical music (records), photography.

Australian citizen since June 1957. XYL is quite positive towards my activity. Daughter Sigrid had 2GB Quiz Kid experience (4th year high school). Son (6th class) is technically minded.

—. . . —

AMATEUR TELEVISION

(Continued from Page 7)

2. **Video Signals.**—Pye type co-axial sockets for all inputs and outputs, cords to be ¼" co-axials with two Pye type plugs. A number of these will be needed, so a reasonably cheap plug/socket is required. They are available in quantity ex disposals.

3. **Radio Frequency** (carrier freq.).—Amphenol u.h.f. type connectors, and 75 or 50 ohm cables as desired.

4. **Power.**—Always on octal plugs and sockets, to avoid misconnection with sync. B+ to be 260 volts in all instances.

5. **Mains.**—Male and female inlet and outlet to be provided on each power supply, to enable interconnection of several units. Outlets to be standard 3-pin.

Comments please, as if we can standardise connectors, exhibitions and demonstrations become comparatively easy.

Before discussing the transmitter proper, I will outline next month methods and equipment for lining up and testing the units described so far. This will ensure that the picture radiated is as good as the equipment will give.

BOOK REVIEW

"HOW TELEVISION WORKS"

An Illustrated Non-Mathematical Account of its Principles

By W. A. Holm

This is the title of the book which tells you all you need to know, without higher mathematics being necessary for you to obtain a thorough understanding of a very fascinating subject. This is a book we have enjoyed reading; it can be recommended to all interested in Television, and who isn't these days. It is a book that could be thoroughly enjoyed by the YL, but if she will not read it, do not be discouraged OM, it will make you an "expert" in her eyes.—VK3ASC.

Our copy from Philips, Eindhoven. Local stocks should be available when you read this at £2/2/0 per copy with postage an extra 2/-.

— . . . —

W.I.C.E.N. NOTES

A letter received from the Director of Civil Defence for N.S.W. expresses his appreciation of the efforts of officers and members of the Institute in organising and maintaining efficient and reliable emergency communications. The Director also outlined action initiated by his own organisation to facilitate the more effective working of W.I.C.E.N

We have thanked the Director, on your behalf, for both the message of appreciation and steps taken to help us to help the Community as a whole.

Actions such as related above are proof that the value of the service rendered by the Amateur in times of emergency is readily recognised by those who have had experience of the quality of his work.

Authorisation Cards are now in the hands of the printer and will be issued as lists come to hand from Divisional Co-ordinators. Great care has been taken to select material which will withstand the most rigorous conditions, in order to ensure that the log section will become something to be proud of with the passage of time and the succession of entries therein.

VK9 reports the enrolment of twelve members during its initial drive.

Unfortunately it is not possible to publish frequency table yet as some Divisional Co-ordinators have not sent in the figures for their States.

An article appearing in July "A.R." sets out the N.A.T.O. Code, hence there is no need for us to reprint it at this stage. The author of the article referred to may not be enamoured of the Code; however it is important for W.I.C.E.N. operators to bear three points in mind.

- Firstly, the lack of a common code during World War II. proved very costly in Allied lives, due to the misunderstandings which occurred.
- Secondly, the Code takes into consideration the speech characteristics of the large number of Countries involved.
- Thirdly, properly used the Code will become a good habit—a habit that will stand us in good stead in times of emergency. For under these circumstances who knows who will be working whom?

If you have not already done so, forward your request to your Divisional Co-ordinator now for registration as W.I.C.E.N. operator

All applications must be forwarded through Divisional Co-ordinators to Federal Co-ordinator. After registration authorisation cards will be sent to you via your Divisional Co-ordinator who will see that the necessary signatures are obtained.

The Numbering System will follow the pattern employed for S.w.l. Groups, that is, Divisional prefix followed by individual number in four-figure group.

SUPPORT THE ADVERTISERS WHO SUSTAIN "AMATEUR RADIO."

I.T.U. FUND DONATIONS

Despite the fact that the appeal for funds to send a delegate to Geneva in 1959 to represent the Australian Amateurs is only a little over a month old, almost one-half of the necessary finance has been raised. This is an excellent start, but like most appeals after the initial burst of contributions, the interest lags and donations begin to fall off. The same may be expected in our case, unless every Amateur makes the necessary effort. Ask your Amateur friend if he has subscribed when next in QSO with him—press him with the importance of raising the money so that his individual views may be properly presented at the appropriate time. Divisions are also urged to publicise the Fund in their weekly broadcasts so that as many as possible subscribe to this worthy and most important appeal.

Several questions have been asked in connection with the Fund—a common one being, "What will happen to the money raised if the full amount is not subscribed?" I think there is every indication that the amount will be raised, but taking the most pessimistic outlook (which should really not be even contemplated at this stage) we can say that the matter will be put to the Federal Council of the Institute who will ensure that the money raised is used in the best interests of EVERY licenced Amateur. We feel sure that every licencee is well aware of the issues that are at stake and will not let the cause down.

Another question raised is who is likely to represent the Australian Amateur at Geneva. The necessary qualifications for such a representative are comprehensive and Federal Executive have already enumerated them, but it is putting the cart before the horse to select or even discuss individuals at this time until we are sure the funds are available. Suffice it to say that several offers have been received, all of which will be thoroughly considered before making a final decision.

In the meantime keep sending your donations to the:

Federal Secretary,
Box 2611W, G.P.O.,
Melbourne, C.1, Vic.

The following is a list of contributions to the 11th July: 1958·—

£10/0/0
W. J. Falconer, VK2AWF, Woomera Radio Club, VK5WC.

£6/6/0
W.I.A. Tasmanian Division, VK7WI.

£5/5/0
H. T. Mulder, VK3MK, N.W. Zone Tasmanian Division.

£5/0/0
M. T. Gabriel, VK2AOG; R. A. Priddis, VK2RA, J. C. Duncan, VK3VZ; B. R. Harris, VK3ZFH, H. H. Lloyd, VK5HL.

£3/3/0
J. S. Anderson, VK3LM; A. P. Stephenson, VK4PS.

£3/0/0
A. W. D. Wilson, VK3ZAZ; G. Goldsmith, VK3IM.

£2/10/0
J. G. Rodger, VK3ZAU

£2/2/0
D. J. Pollard, VK2ASW, E. L. Andrews, VK-2BO, Waverley Radio Club, VK2BV, J. T. Lake, VK2OK, N. L. Southwell, VK2ZF, N. S. Gilmour, VK2ZU, D. A. Connelly, VK3ADE; A. J. Zarth, VK3AJZ, A. K. Head, VK3AKZ; R. R. Mackay VK3MU, R. Neal, VK3ZAN, L. deG. Macmillan, VK3ZDG, F. Moody, VK4FM, M. C. Bolton, VK6MB.

£2/0/0
C. Berry, VK2AGM, T. J. J. Stroud, VK-2AMR, J. H. L. Field, VK2AQF, W. G. Coward, VK2AWP, A. V. Bennett, VK2VA, A. K. Fielden, VK3AKD; A. M. Doble, VK3AMD, J. B. Hawke, VK3ARH; N. M. Templeton, VK-3HG; H. P. Webber, VK3PW; L. S. Dixon, VK3TE; W. L. Robb, VK3YR, G. Pooley, VK-4DJ; E. J. Lake, VK4EL, L. J. Brennan, VK-4XJ, D. W. Rickard, VK4ZDR, T. F. Robbins, VK5AQ, W. E. Coxon, VK6AG, R. A. Hallamore, VK6RH, R. Jaeschke, VK6WU, W. N. M. Nisbet, VK7BN, P. E. L. Dunne, VK7PD, R. Fleming, VK9SP.

£1/10/0
J. Adams, VK3ARJ; D. A. Greenham, VK-3CO; A. S. Condon, VK5WO; B. H. Smith, VK5BS, A. R. Deverell, VK6ZAD; P. R. Hoare, VK9RH; W. C. Gee, VK9WG.

£1/5/0
F. R. Williams, VK3ZDW; K. T. Robertson, VK4ZAK; D. R. Garratt, VK6DG.

£1/1/0
J. C. Nourse, VK2DQ; N. W. Skulander, VK2JW, W. H. Marshall, VK2XM; W. J. Kinsella, VK3AKW, B. Falkenberg, VK3FA, A. F. Marshall, VK4AF; R. W. Holland, VK4AQ; Dr. J. A. Kelly, VK4DK; E. Ashlin, VK4EA; R. E. Lees, VK4ER; L. R. Newsome, VK4LR; W. A. E. Flannery, VK4XO; D. A. Fraser, VK4ZAF; J. A. Gibbs, VK5AJ; C. L. Haines, VK5CH; D. E. Hosking, VK5DH; R. F. Treharne, VK-5IQ, R. G. Harris, VK5RR; J. Gabbertas, VK-6GB, G. Moss, VK6GM; R. W. Muir, VK6RW; F. H. Turner, VK6UF; W. J. Howse, VK6ZAA; L. F. Clark, VK7CK; J. C. Batchler, VK7JB; A. J. Manning, VK7LR; C. P. Wright, VK7LZ; R. T. Calvert, VK7RT; L. K. Earp, VK9LE.

£1/0/0
S. Brown, VK1ASB; H. Hutton, VK1HV.

H. Wright, VK2AWH; Dr. R. Black, VK-2QZ; E. Savage, VK2ACS; G. Bootes, VK2AGC; J. Graydon, VK2AIS, B. Powell, VK2AIZ; J. L. Jones, VK2JJ; R. Cairns, VK2KF; S. Savage, VK2PL, A. Slight, VK2ZA; R. Crewe, VK2ZBQ; K. Brady, VK2AFF, J. Jack, VK-2AGX; R. Thornburn, VK2AIP, J. Trezise, VK2AMX; J. Scougall, VK2ASC; W. Baillie, VK2AWB; J. Pike, VK2JP; G. Nolte, VK2QO; S. Kaufman, VK2SK, F. Broome, VK2XJ, J. Hansen, VK2AAX, J. Gerard, VK2ADN, R. Phillips, VK2AQI; K. Andrew, VK2ATK, J. Thornthwaite, VK2ATO; D. Davies, VK2BZ; R. Ferrie, VK3CV; W. Bell, VK2ED, W. Johnston, VK2YZ, Rev. G. Nell, VK2JQ, J. Lambert, VK2ZJL, T. Preece, VK2NN, G. Hovle, VK2RI; P. Levenspiel, VK2TX, N. Bruce, VK2ZAY, H. Burtoft, VK2AAH, T. Hooper, VK2ATH, L. Lawson, VK2LA, D. Melbourne, VK2NK, R. Dixon, VK2QD; J. Dempsey, VK2ZCI, J. Wells, VK2AUB; J. Woodman, VK2ZE; A. Ward, VK-2VH; Tamworth Radio Club, VK2ANT; C. Luck, VK2AVL, W. Webster, VK2EW; J. Early, VK-2KQ; J. Horton, VK2AB; A. Clark, VK2AHK, R. Dowe, VK2RP; R. Helmann, VK2TH, E. Eastley, VK3VT; R. Hancock, VK2YM, P. Salinger, VK2ZAW; W. Campbell, VK2ZY; B. Eve, VK2AJC, D. Evans, Associate.

B. Alexander, VK3ADV; W. Hempel, VK-3AHO, R. McNabb, VK3AIM, R. Gibb, VK-3AQG, E. Cook, VK3EC, D. Britt, VK3HT; J. Bwainger, VK3IP, W. Daniel, VK3NX, D. Millar, VK3PO, W. Dennis, VK3XE, A. Bridge, VK3AEB, E. Pont, VK3AGP, G. Bills-Thompson, VK3AHN, J. Kelleher, VK3AIK; C. Turner, VK3AQI, T. Naughton, VK3ATN, A. Woolnough, VK3BW, L. Lockhart, VK3LE, R. Elliott, VK3ZAE, J. Kelleher, VK3ZAJ, L. Bills-Thompson, VK3ZCB, A. Finch, VK3AEO, M. Esam, VK3AGE, F. Anear, VK3AGF, E. Giddings, VK3ANQ, A. Boast, VK3AX, G. Horrocks, VK3AYS, F. Hanham, VK3BJ, H. Cliff, VK3HC, H. Roberts, VK3HR, J. Anderson, VK3JA, W. Carlyle, VK3JP, J. Isaac, VK3PL; B. McCubbin, VK3SO, M. Rodger, VK3UI, E. Kelly, VK3ZAK, P. Bennie, VK3ZDP, K. Alcock, ex-VK2AOA; J. Barber, VK3ABT, C. Burrows, VK3AXD, C. Reed, VK3IX, M. Muller, VK3IU, K. Scott, VK3SS, C. Baker, VK3VP, T. Walsh, VK3ZI, C. Traill, VK1AIT; W. Brownbill, VK3BU; W. Bennett, VK3EJ; K. Magee, VK3KM; G. Morrison, VK3TH; G. Sutherland, VK3ZAA, C. Davey, VK3ZDA; H. Lelliott, VK3ZG, A. Phillips, VK3AAP; J. Bail, VK3ABA; I. Lecis, VK3AIL; H. Brown, VK3NN, D. Calwell, VK3NP, E. Caddy, VK-3AEC; J. Ballinger, VK3NK; V. Wyatt, VK-3AXW; L. Burrows, VK3DB, H. Williamson, VK3GW, P. Sebire, VK3MX, T. Rodda, VK-3ATR, J. Thomason, VK3AZK, A. Maguire, VK3IO, J. Gardner, VK3NA, H. Duggan, VK-3XI, K. Semmler, VK3ATS, K. Cakebread, VK3DW; V. Harrison, VK3QD, M. Quick, VK-3RQ, K. Cosgriff, VK3WM; J. Wales, VK3ZBX; L. Elliason, VK3ALE; J. Martin, VK3AV, M. Rieper, VK3DT, P. Barnes, VK3GH; R. Wookey, VK3IC, L. Rickards, VK3JH, H. Dobbyn, VK3MF; N. Robb, VK3ZAR, J. Howden, VK-3ZCH, M. Osborne, VK3ZCZ; G. Small, VK-3ZEA; W. Annison, VK3AWE; K. Love, VK-3AWU; C. Anderson, VK3XV; W. Tremewen, VK3ZCI.

A. Miers, VK4AD; N. Wilson, VK4NP; H. Hobler, VK4DO; H. Sprenger, VK4ES; J. Ross, VK4JO; J. Rintoul, VK4JR, D. Presland, VK-4PW, H. Perkins, VK4XH, J. Bickford, VK-4ZAZ; J. Kane, VK4ZZ, R. Greenwood, VK4NG, R. Gordon, VK4RI; C. Weller, VK4CZ, A. McGregor, VK4KX; N. Mills, VK4NM, A. Caswell, VK4CB; L. Waterworth, VK4CL; O. Ahnfeldt, VK4OV; R. Stacey, VK4RS; R. Glassop, VK4BG, V. Brown, VK4BJ, M. Lindsay, VK4HD, R. Britton, VK4MF; F. Edwards, VK4ZAJ; K. Long, VK4ZAM, H. Peters, VK-4ZP; H. Greber, VK4CY; W. Berry, VK4WB, E. Nissen, VK4XN, M. Swaby, VK4DA; L. Merchin, VK4MG; J. Currie, VK4LC; H. Cox, VK4OX, C. West, VK4TR.

C. Bishop, VK5CY, N. Wallage, VK5GW; J. Carruthers, VK5HC; C. Judd, VK5HQ; H. Watson, VK5HW, L. Deane, VK5LD; G. Luxon, VK5RX, L. Finn, VK5SP; A. Hewitt, VK5XK, A. Holiebon, VK5ZBQ; B. Wall, VK5ZCX; A. Brown, VK5ZL; F. Wilkinson, VK5ZO, I. Wall, VK5IW; C. Baseby, VK5BZ, J. Gazard, VK5JG; D. Dawson, VK5KD, P. Davoren, VK5KM, E. Barbier, VK5MD, R. Hooper, VK-5NL, H. Osman, VK5OZ; T. Leidler, VK5TL; A. Peppercorn, VK5TP; J. Ward, VK5WJ, L. Catford, VK5XL; C. Mann, VK5DF; P. Keddie, VK5KZ; R. Wreford, VK5RW; J. Rosevear, VK5KE; L. Jantke, VK5LE, W. Bayly, VK5WM; E. Daw, VK5EF; T. Lolly, VK5TJ; B. Jellett, VK5AB; H. Young, VK5EU; J. Moffatt, VK5MG; W/O. L. Baker, VK5OB/OC; R. Larsson, VK5RL; G. Bowen, VK5XU; N. Martin, VK5ZAV, G. Taylor, VK5ZBT, J. Lewis, VK5LJ; A. Tuck, VK5BT; M. Dow, VK-5KF, G. Gray, VK5KP; W. John, VK5WH, E. Whittington, VK5ZAQ; A. Molineux, VK5AV; C. Ferguson, VK5CJ; J. Coulter, VK5JD; L. Latta, VK5RA.

D. Brown, VK6ZAV; J. Jeffrey, VK6AJ; G. Lee, VK6AK; E. Cornelius, VK6EC; C. Andrews, VK6ZAZ; J. Park, VK6BB; L. Wilson, VK6LG, C. Rutledge, VK6CR, L. Roegen, VK-6HR, R. Hugo, VK6KW; W. Duns, VK6WD, W. Phipps, VK6WP, T. Ruse, VK6WK, L. Potts, VK6ZBL; A. Hill, VK6AH; G. High, VK6HG, D. Graham, VK6HK; M. Hill, VK6MH; R. Skevington, VK6ZAN; V. Kitney, VK6VK, J. Kitney, VK6AV; C. Hayes, VK6CK, A. Grogan, VK6ZI, K. Echberg, VK6KE; J. Hoar, VK6OR; T. Long, VK6TL; J. Moyle, VK6EZ; F. Gray, VK6QO; S. Stewart, VK6ZAS; F. Chapman, VK6CC; G. Ashley, VK6GA.

D. Robinson, VK7DR, M. Watson, VK7ZAK; K. Saxon, VK7AI, E. Cruise, VK7EJ; J. Oliver, VK7JO, L. Cordell, VK7KC; H. Hancock, VK-7MZ; R. Nicholls, VK7RN, S. Medford, VK7SF, G. Moore, VK7SM; S. Pattison, VK7UW; E. Walker, VK7WA; G. Groves, VK7XL; R. Wilson, VK7ZAA; A. Hildyard, VK7DH; A. Allen, VK7PA; R. Walker, VK7RW; D. Fisher, VK7AB, R. Fulton, VK7AF, M. Chaplin, VK-7CA; D. Johns, VK7DJ, E. Bovis, VK7ED; F. Evans, VK7FJ; M. Hurburgh, VK7MH; M. Koglin, VK7MK; N. Campbell, VK7NC; K. Johnston, VK7RX; W. Tanner, VK7TE; W. Watson, VK7YY; Associates: D. Allen, K. Minck, T. Tongs, J. P. Wilson, M. W. Ives.

Trade Donations

Trimax Transformers Pty. Ltd., £5/0/0.

The progressive total as at the 11th July is £1,105/18/3.

ADHERENCE TO COPY DATE

Once again correspondents to this magazine are reminded that copy must be in the Editor's hands at 191 Queen Street, Melbourne, by the **8th of the month** preceding publication.

Recently, publicatoin has been delayed through copy arriving late. In future the magazine is going to press on the due date and it is problematical whether copy arriving after the 8th of the month will appear.

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Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

NEW REGULATIONS

Editor "A.R.," Dear Sir,

I have just perused the recently issued "Handbook for Operators of Amateur Wireless Stations," Feb. 1958, and am interested to note differences between this and the latest previous issue in my possession, that of January 1946

The former regulations stated that "An experimental station licensee may transmit and receive in plain language messages" etc. The new edition states (para 66): "An amateur station licensee may transmit and receive, in English, plain language messages" etc. This appears to imply that only the English language may be used. On the other hand, there is no prohibition of the use of any other language. It would be of interest to know whether it is no longer permitted to use languages other than English.

If this is the case, what is the position which would arise in the event of a similar regulation applied to the Amateurs of another country with an official language other than English? Would not this effectively prevent Amateur communication between that country and Australia even though such communication were officially permissible?

Another alteration worthy of note is that whereas formerly transmissions of unrecorded music for the purpose of tests only, were allowed for short periods, we are now not permitted to transmit OR RECEIVE music (except single audio tones for tests of short duration), or other form of entertainment. No longer will anyone be able to compete with "Piccolo Pete" or other nuisances on 7 Mc.!

The new phonetic alphabet has been canonised, together with a clear indication of official pronunciations. A glance at the phonetics shows that these are almost all words which are common to and similarly pronounced in most Western European languages. This should be of comfort to your lamenting correspondent, Mr. Norman Burton (July 1958). I, for one, will now be glad to become "THUH-REE CHAR-lee no-VEM-ber.

—Laurie Walters, VK3CN.

[F.E. is discussing the matter of English language regulations and necessary action will be taken. Ed.]

I.T.U. FUND

Editor "A.R.," Dear Sir,

I quote ad. in June "A.R.": "By donating £1 you can insure against loss of your favourite band". This descent to the methods of commercial salesmanship in an effort to obtain finance by misrepresentation, could cause us to lose the very thing we are paying to retain. Surely there is not one among us naive enough to believe that the £1 only will safeguard our interests at the next I.T.U Do you really believe that we will keep fully all the frequencies now allotted?

There will be one awkward question asked of our delegate at I.T.U., viz.: "Why are the VKs not fully using the bands?" and no amount of word manipulation is going to provide a convincing answer. The short-lived bursts of activity at week-ends is nowhere good enough. I am constantly asked by DX "Where are VKs?" Europeans, etc., are hungry for QSOs with us.

We will only get out of Amateur Radio what we put into it—and the Ham who never puts a sig. on the air, or the prefix-chaser, who scavenges the band to pick the eyes out of the DX, with an occasional three-minute QSO does the game a dis-service. The £1 for I.T.U. is useless unless the boys will work the bands, provide activity. Fellows who think more of Ham Radio than they do of their personal achievements. The great number of awards and certificates now available tend to make it all an intensely competitive affair Fair enough, but without a broader base of co-operation to sustain it. Amateur Radio is in for an inglorious demise.

Ours is a case of populate or perish, and up to now we have shown that we do not fully need the bands we now have allotted.

Those OTs who swung the dial across the empty spaces of the v.h.f. spectrum 10-20 years ago and who are still active, must ask themselves how much will be left to us in 10 years time.

The sharing of a band can be little better than direct loss. Try working DX now on 7 Mc. and you will see what I mean. I.T.U. is not much more than 12 months away and £1s alone will not protect us.

—Al Shawsmith, VK4SS.

EXPLANATION

Editor "A.R.," Dear Sir,

An item in the New South Wales notes in the July issue of "Amateur Radio" is not correctly reported, and as a result has caused some confusion.

The article refers to a Notice of Motion of mine which was before the N.S.W. Division. Whilst in some remote way if may refer to R.D. Contests, it is not relevant as the rules for this Contest usually cover the question.

The Motion, which was passed unanimously at the June meeting, was: "The rules for any transmitting award granted by the Wireless Institute of Australia clearly state that to obtain credit for that award, two-way communication must be established on one and the same frequency band, i.e. cross-band contacts are not eligible."

I hope this clears up any doubts which may have arisen in the minds of members.

—F. T. Hine, VK2QL.

RURAL FIRE BRIGADES

The Publications Committee acknowledges with thanks a letter from Mr. A. J. McDonald, of Gooram, Vic. Mr. McDonald expresses appreciation of country folk for the work of experienced men who devote the skill employed in their Amateur Radio hobby activities to the important community service of volunteer fire fighting communications in rural areas.

The Committee agrees with Mr. McDonald that his list is far from complete and is confident that the large number of men who add their technical help without thought of gain or favour will continue to do so to strengthen comradeship and efficiency in a valuable service.—Editor.

DX

Frank T. Hine, VK2QL
30 Abbotsford Road,
Homebush, N.S.W

Planning and advising every one possible of our plans for the DXpedition to Lord Howe Island has not enabled me to watch the bands to any great extent as far as general conditions have been concerned during the last month, but general opinion has indicated that the bands have been in the doldrums as far as VK has been concerned.

From a VK point of view, the m.u.f. does not appear, should normal predictions exist, to favor Lord Howe and VK contacts on 14 Mc. and above. It has been amazing how the information we started from Sydney has been dispersed to DXers round the world, due to the co-operation of unselfish DX men, who passed it to countries which have not been regularly audible in Sydney. 2AIR and myself say thanks to all who co-operated.

An indication of how bands can come to life was shown during the week-end of the A.R.R.L. Field Day, when the bands were jammed with signals, especially 7 and 3.5 Mc.

The extent to which some of the DX gang will go in an attempt to ensure a contact with a DXpedition station has been shown by the letters, etc., which 2AIR has been receiving. These amount to nothing much more than an attempted bribe, as the writers have requested some special consideration and have enclosed dollars to help with the consideration. However, they have received their letters back complete without comment by 2AIR.

Further to my comment last month on the break up of the countries in the Carribean area, it is confirmed that the Cayman Islands and Jamaica are now one and the same country. Credit for the new countries may be obtained provided they were not previously credited under the former Leeward and Windward group. If you had previously submitted a QSL for a station located in the Winward group which was on St. Kitts Island and was used for your Leeward credit, you will now have a credit for St. Kitts only. The same applies to the Windward group. Further, if you had both Jamaica and the Caymans as separate countries, they now count as only one. This, by the way, is for A.R.R.L. DXCC. I have no knowledge of how the W.I.A. Awards Manager is going to act on the changes made.

The calls used from Greece, Crete and Rhodes are re-issued very soon again after they are handed in, so a station you contact one month could be an entirely new issue the next. SV0WN is at present active on Crete and SV5WB currently active from Rhodes. (W4KVX)

NEWS AND NOTES

I had some interesting letters from DX stations this month, to wit, G6YQ, OY7ML and OH2YV. Some general interest information from each is:

G6YQ has regular contact with OY7ML and if you have trouble getting a card from Martin, George may be able to help you. He expects to meet ZD3G personally before you read these notes. OY7ML, in a very good attempt at English, is waiting a new printing of cards as he sez he is always "running dry" of them, but complains that he has not received many promised QSLs from DX stations and especially requests VK6NF to QSL their 28 Mc. contact, VK7UW, VK0AB and VK0TC not to forget him. A lot of VK2 QSLs are outstanding, so if you need one from Martin he may be waiting for yours, so try another. He comments on seeing the supply ship on VK8AS QSL as he has a friend who is a crew member of the ship. OH2YV, who was OH3YV/O, is getting his own back on those whom he worked under his home call but did not QSL him, by withholding the Aland Is. QSL until he receives one for the home QSO. He sez he has a lot of "frozen" cards waiting. In March this year he married OH2FB.

VS9O, after only about two days' operation from the Sultanate of Oman, was forced to close down by the authorities.

VS9AP has closed down and returned to the U.K.

QSLs from VS1BB/VS9 have been distributed and all should have them by now.

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* Call signs and prefixes worked.
z —zero time—G.M.T.

KC4AF QSLs for all VK contacts have been despatched by W6JIN. If you sent I.R.C's. they will reach you accordingly, otherwise through Bureaux.

VR2A, at time of writing is convalescing in Sydney after having broken his leg during cable repair operations (3AOM)

ZD1FG is active on c.w. and phone, but at time of writing his b.f.o. has given out, but guess that will have been overcome by now.

Does anybody know why UA1KAE uses an oblique stroke followed by varying numbers? In the activities list you will see a few different ones.

The news that the A.R.R.L. has disallowed ALL contacts made with ZL1ABZ on the Kermadec Is. is causing no surprise to those who heard some of these "contacts" and apparently observers in the States were so concerned as to take the action they did. The unfortunate part is that quite a number of the contacts were complete and in order, but it does not take much imagination to realise the almost impossible task to sort them out especially with some of the things that go on, that they had no alternative. There is no doubt that ZL1ABZ was heard in the States on 3.5 Mc. but some countries he was reported to have been heard on 3.5 Mc were just not possible under Ionospheric Predictions at the time.

ZC3AL has QRT and returning to VK2. Bureaux please note.

ACTIVITIES

3.5 Mc.: No definite DX reports but 2AGH reports hearing many W stations over a few hours during the F.D. week-end.

7 Mc.: 2AMB: YO6KBA, WU2YG. Rod de Balfour: JA1ABA, W, BERS196 G3EBV, JA-9LA, KH6JG, W0BKL/KG6, 5Fs, UA1KMC, VQ4FK. WIA-L3000: LU6WG (6000z).

14 Mc. C.w.: 2AGH KC4USB*, KG4AW*, PZ1AR, VU2AJ*, FF8AJ*, HL9KR, ZD7SA, UD6KAC, ZD1FG, 2AMB, 4X4CK*, 4X4FU*, 2A8BF*, OA4VN, JZ0HA, VS9AP, ZL3AC, UQ2AN, FA8RJ, KR6QW, KR6USA, 9OW, PJ2MG*, GM3HLQ*, GM3MDX*, UA6JJ*, UL-7JA*, VP8CR, PZ1AR, YJ1DL, 2QL VP8AK*, OR4VN*, ZD7SA*, EA8DF*, HK4DP*, CT2AI*, FB8ZZ*, VP7BT*, VS9AP ZD1FG 2ZE YO-3CD*, JT1AA*, EA8AW*, 11KN*, FB8XX*, GD3UB*, UB5FG*, UA1KAE/4*, and 83 Europeans. 4DO VE*, W*, ON4*, G*, F*, I*, KW8AI, CT2AI, VO1DX, CX1AK, JZ0HA, LB-8OE, HS1C, SP8PZ, HB9NZ, UA0OF, UA9JF, FB8ZZ 6WT JT1AA*, OH*, OZ*, UI8AD*, UO5PK*, VQ2AS*, KH6*, VP8BL*, UA1KAE/7*, UA1KAE/8*, KA*, UR2BU*, YO*, UA3*, OK*, ST2AR* 7LZ: HB*, VP8AK/P*, CT2AI*, VE3*, DJ*, SM* BERS195: DL6, DU1RTI, FB8ZZ, GC1AAE, HB, HB1C, JT1AA (3100z), JZ0HA, KC4USA, KB6BJ, KM6EVK, KW6CE, KZ5BB, LU1EX, MP4BCK, OA4FM, PY2AHS, SV0WP, VE3, VK0TC, VP2LB, VP5BL, VP8CR, VP8L/P, XE1MB, ZC3AL, ZK1AK, 4X4WT 5A2TY. WIA-L3028 JA, UA0, VR2DG G, XE1BL, I, VP8AK/P, HB, PA, DU1SV, KZ5BB, SV0WP, LA, OK. WIA-L3003: BV1US, DU7SV, FK8AT, GC1AAE, FB8ZZ, I, KL7, KM6EVK, KC6ZD, KV4AA, OH, OA4BW, PY2DB, SL6AX, UP1AT, VS1HU, VP8BL, YU4YX, XE1MB, ZC4WW, ZK1AK.

14 Mc. Phone: 2AGH: CT3AN*, UA1KAE/8*, UA0KQB*, CT2AI*, GD3JIM*, SV0WN*, EL9A, ZD1FG 2AMB ZS6DE*, HK4DP*, ZL3AE, 2AOM FK8AU*, G*, I*, OA4GW*, OZ*, VE*, VR2DA*, VR2DC*, XE1FT*, XE2MS*, XE2TM*, W*, 4DO: VE*, W*, VK3AD*, KL7*, XE2KW*, HK7LX*, FK8AS*, VR2JB*, HK3EL, OA4GW, HL9KS, VE3. Rod de Balfour G, I, DL, EA-8JE, F, CT1PK, CT3AN CN8MM, 5A1TX, SV-0WB (0315z), 4S7YL, VU2BK, VR1C, VR4JB, FO8AC, TG9AL, XE2KW XE2DO, KZ5US, VP2DL, HR3HH, HH3DL, EL9A, HK7KL, PY-1APE, LU8AJ, ZL3AE WIA-L3001 FK8AS, VK0KT, VE1DR, VE2WW, XE2KW, XE2MF, XE2TM, VE8ON, VK0AT, FU8AD, PY3CK. WIA-L3027: EA8CD, FU8AD, HK7LX, HK3KF, VR2DA, VK0TC, VK0KC, VR4JB. Ian Thomas, who uses a 4-tube regen. rx and heard ZL, VR2DA, KL7FAC, VR2BJ, VE7TS and most W call districts.

21 Mc. C.w.: 2QL: VP8VM/P*, KB6BJ*, VK0TC*, VP7NB*, 2ZB: DL6BH/P*, UA4IF*, UA9CR* and Europeans. 7LZ: KB6BJ*, KH6*, KL7*, PA*, VS1*, VP8LT*, DL*, JA*, 4X4GZ*

21 Mc. Phone 2AMB OA4AI*, VR2AZ. WIA-L3021 CN2BK, F7CT, G3JRT, HS1E, KX6CR, VS1GL, VS1DW Rod de Balfour: G, DL4XS, FW8N, I1VGF, 5V6WT, 4S7YL, VS1DQ, VS1GE, HL9KT BV1US, ZD1EO, ZS6UR, ZS-2DO, ZS2QH, ZS6JJ, PY1APE, HC1PC, VP8EM.

28 Mc. C.w. and Phone. 4XL ZS5DU*, ZS-1DC, ZS2JK*, KZ5HI*, KZ5KR*, PJ2CN*, YN1MA*, W*, KH6*, 7LZ. VK0AT*. WIA-L3022 FK8AS, KX6CR, VR2A, VS1HX. W. Rod de Balfour KL7AH8, KL7AGT, KP4GA, LU8EJ, ZS6BW, ZS6MU, JA1BE, HR8LW, YN-1HP, VP1EH, 4S7YL.

QSLs RECEIVED

Some good QSLs have been coming through this month and 2AGH received VQ2CF, PJ2CE, HZ1AB, HL2AM, ZB2I, FW8AA, LZ1KSZ, CT-2A1, FB8XX, HH2CL, UA4NB, EA8BM, FA3OA, OE1ER, ZC4IP, VS1BB/VS9 2AMB CE4AD, LU4GM, SP7HX, VS9AC 2OW JT1AA, 5A-2TY, MP4BBE, HL2AM. 2QL: OY7ML, VS1BB/VS9, OH2YV/O, EA6AM, PJ2AE, HL2AM, JZ0HA, JA3AA (3.5 Mc.), HH2CL, VQ4KPB 7LZ VS1BB/VS9, XQ8AG, ZS1BV, VK9JF, LA3MC. BERS195 OH2KK/O, SV0WR, UC1AD, UJ8KAA, UL7HB, UN1AE, UO4PK, VO1NA, ZE7JR, ZM6AS, 4X4IL. Rod de Balfour VE-3AHU/8U, ZC3AC, PY1AQT, GC8FQ.

QTH OF INTEREST

OR4VN—QSL via ON4 Bureau.
VR2AP—QSL via R.S.G.B.
HS1C—Box 1038, Bangkok (4DO).
VO1NA—Jack Willis, Aeradio, Dept. of Transport, Goose Bay, Labrador (BERS195).
ZD7SA—Bob Freese, Napoleon St., Jamestown (W4KVX)
ZD7SB—Peter Billing, C/o. P.O., Jamestown (W4KVX)
ZD9G—13 Tedder Ave., Wayfields, near Chatham, Kent (W4KVX).
HN8A—F D. Fuqua, Daura Refinery, Box 278, Baghdad (W4KVX)

To enable me a little more time to prepare these notes and cope with the many interruptions, I find I must advance the dead line a couple of days so would you please let me have your material no later than the 28th of each month in future.

And so my thanks this month go to 2AGH who has now reached the total of 198c. worked, 2AMB who still is chasing zone 25 and unaware that he was on top of FF8AC a couple of times 2OW waiting on QSLs from two zones to complete W.A.Z. 2ZE did not find 21 Mc so much to his liking. 2AOM, like others, found the bands a little flat. 4DO comments on the number of VE3s he noticed during the month. 4XJ who can usually find something to QSO on 28 Mc. 6WT we welcome to the column. Keep it up David and have VK6 on the page each month. Rod de Balfour for his list and the QSP of 7LZ doings. WIA-L3001 who is seeking to mould the s.w.l's. of VK2 into an efficient group. WIA-L3023, who really is settling down to all band listening with his new converter. BERS195, hope all OK again now Eric. WIA-L3029 who finds listening at Orbost much better than in Box Hill, 3RJ note, and finally Ian Thomas whom we wish good hunting with his regen. That winds it up for now and hope you all make the grade with the DXpeditions expected to be going during July.

VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

50 MEGACYCLES

Cold nights, minimum DX. The testing period has arrived for 50 Mc. enthusiasts. Each evening finds regular sessions on the band in all Divisions with activity on the increase. Each Division reports the advent of new call signs and the standard of enthusiasm indicates that there will be plenty of QRM on the band when DX begins to appear regularly again. Bugs in new equipment are being ironed out, whilst quite a lot of thought, design and hard work has gone into the planning, building and erection of bigger, better and higher beams. All appear to be intending to make a major effort to work whatever DX is offering before the end of the year in case the opportunity is not there after December 31.

The admiration of the boys on 50 Mc. goes out to F.E. for the enthusiasm they are showing, attempting to be represented at the forthcoming I.T.U. Conference. They are sparing neither effort nor energy in fighting for the retention of all our allotted frequencies which the commercial interests are after, particularly the d.c. segments occupied by the fully licensed Amateur and commonly classed "DX bands" The pertinent question, and the one uppermost in the minds of the 50 Mc group, is: "Is F.E putting as much effort and enthusiasm into its approaches to the P.M.G. for the retention of 50 Mc after December 31 this year?" (Yes.—Ed.)

Make sure that as an individual you carry word of your interest in and activity on 50 Mc. to both your Divisional Council and Federal Councillor and plague them to carry the fight for the keeping of 50 Mc. to F.E. And back it up with your log entry for the I.G.Y., you cannot expect F.E. to be active on your behalf if you let them down in answer to their request to you.

Has your V.h.f. Group yet discussed the Ross Hull Contest rules so that recommendations can be made to the Contest Committee for either the retention of the present rules or their alteration?

The DX picture is poor this month, producing only a couple of openings as listed under the Divisional notes, VK4/5 and VK6/JA. Of particular interest is the JA/ZS5 contact mentioned in the VK5 notes. World-wide conditions have shown a general deterioration, but they are expected to pick up again over the next couple of months. Newcomers to the band who lack experience and the chance of picking an Interstate opening would find it an aid to monitor the 28 Mc. phone band. If you hear stations in the Division next door, call in that direction on 50 Mc. The same applies to short skip on 14 Mc., though here it applies to country stations in your own Division. Many a quick and short opening has been caught by these methods. If you have time to tarry, listen to the anguish of the 50 Mc. man caught in a contact on 28 Mc. when short skip develops and he cannot get out of the QSO in which he is a partner.

NEW SOUTH WALES

Hi chaps, well the cold weather has really been with us, but the v.h.f. activities have still kept rolling. Looking back over June we had a full month, starting with the v.h.f meeting that was well attended to hear Bob 2OA's lecture on v.h.f converters. Bob pointed out some of the nasty pitfalls you can run into and gave a very detailed discussion on suitable precautions, which included, Bob's preferred shielding arrangement with d.c leads brought to the top of the chassis through feed-through by-passes, tube and receiver shielding, etc. Very interesting, Bob, and we hope more members will be spurred on to building better converters. Now while on the subject of converters, the V.h.f. Committee is very anxious to take such steps as necessary to assist country members in constructing v.h.f. equipment. It is proposed to hold a v.h.f. week-end in Sydney and will provide for the construction by each attending of a 2 mx converter, whilst a pre-fabricated beam will also be available. Excluding xtal, cost should not exceed 7 db. for the kit. Arrangements will be made for metropolitan members with g.d.o's. to align converters. Every member attending should return with a low cost efficient converter he has constructed, together with a beam. Those interested are invited to write to the Secretary, V.h.f. Group, Box 1734, G.P.O., Sydney, as soon as possible.

Another event of June was the all-day treasure hunt with 2OA planting the treasures. Although cold, the trip was most enjoyable and Bob's well planned route took us through Monangle and home via the back road over Razorback. Bob's criptic clues were keen and the treasures just slightly libelous. 2PM-2ER were first with 2ANF-2ABZ-2AWZ, 2ZAV, 2ZCF, 2HL and John Lek following up in that order How about coming along on one of these events as soon as you've that 2 mx mobile going?

Wednesday night, June 25, saw another fox hunt with 2OA as fox (say, somebody ought to strike a medal for that guy!). We all found him anyway, holed up near an orchard at Baulkam Hills. Your Chairman, Jim 2PM, was first in, followed by Phill 2ZBB, John 2ZAV, 2AWZ-2ZAQ (Dave and Leo) and 2ANF-2ABZ (John and Bill). John 2ZJF, a visitor from Crookwell, and who was with Jim, gave us the low down on his gear and we were interested in his 33 element array. Some interesting skeds are being tied up with him.

Very popular was the scramble held on Sunday evening, June 8, with honours of top score going to 2MZ and 2ZCF, 18 contacts each, 2AWZ and 2RX took 2nd and 3rd places.

Lost during the month was the prominent call of 2ZAL, however Alan is now 2RX. Active stations on 2 mx are somewhat too numerous to list, but we are glad to hear Adrian 2HE and Lin 2AZN paralysing our rx's again. 2AVL has been heard around and 2ZCH has gone QRO, p.m. and a.m., etc. Vic 2VL was heard portable in Sydney whilst on a visit from his new QTH at Orange. 2APP, 2ZAA and 2DR are active in the West and we believe Northern activity is starting to hustle. 2ER's Sunday evening frequency checks are most useful and we thank Phil. for his efforts. The 2 mx receiving gear at Dural is functioning and by the time this reaches you the big tx should be on the air. Well space has run out, so we will pick up the pieces with you again next month.—2AWZ.

VICTORIA

V.h.f. Meeting.—The June V.h.f. meeting and the v.h.f night at the July general meeting were well attended. At the June meeting Reg 3SF gave a description of his 50 Mc. s.s.b. tx. Reg is using a half-lattice xtal filter on 380 Kc. to obtain his s.s.b. signal and uses a number of stages to heterodyne to 50 Mc. where he is using a 6146 linear amplifier. After Reg's talk the discussion centred on ways and means of retaining the 6 mx band and it was decided to approach other V.h.f. Groups and Divisional Councils about the matter.

On the following Sunday, Jock 3ZDG gave a talk on 3WI outlining the reasons why channel 1 would be unsuitable for t.v. He showed that 6 mx is open to Interstate and International QRM and that the 5 mx band, which would be a buffer between channels 1 and 2, would be only tenable with difficulty because of t.v.i. problems.

There was quite a good display of v.h.f. equipment at the July general meeting and country members attending included 3ZCW, 3TL, 3ZDD and 3ZGN from Laverton. Each v.h.f. operator bringing equipment gave a short lecture, details of which appear under Vic. Divisional notes.

6 Metres.—No 6 mx DX has been worked in VK3 for June and QSOs have been limited to local rag-chewing. At the moment, most operators are busily listening and the VK3 gang hope to soon QSO again with VK4 during the next sporadic E openings.

2 Metres.—The Ballarat Group's Friday evening 2 mx contest has got away to a good start and 2 mx operators can be assured of at least five contacts with Ballarat during the evening. Ballarat stations regularly on deck include VKs 3PO, 3ZEJ, 3ZCF, 3ZBS and 3ZER. Two metre activity has declined since the re-opening of 6 mx, but during the lull in activity on 6, some stations have returned to 2. Stations regularly heard on 2 mx include 3ZKF, 3BQ, 3ZCN, 3ZFF, 3ZBP, 3ZDI, and the Ballarat Group.

1 Metre.—Quite a few stations are building stabilised equipment for this band, some of which is already in operation. Ray 3ZAE is using a QQE03 12 tripler driving a QQE03 12 final and has already had contacts using the modulated tripler. Jock 3ZDG has a modified 522 using an 832A tripler. For those wishing to use the 832A as a tripler he recommends the use of filament chokes, a 100K ohm screen resistor and a 300K ohm grid leak. Reg 3SF is working on a QQE06/40 final for 288 as well as a xtal locked converter, and David 3ZAT also hopes to use a QQE06/40 final driven by a QQE03/12 tripler. Mac 3QO already has a QQE06/40 final on 1 mx. Some stations have managed to obtain 6BC4 grounded grid amplifier tubes and some 1 mx grounded grid pre-amplifiers should soon be on the way. These tubes will work at 900 Mc. and should be useful for 576 Mc.—3ZAI.

QUEENSLAND

DX. Can't recall what the stuff is now. In the words of 4 Nancy George, 50 Mc. is as dead as yesterday's mutton. VK5 was heard in Brisbane the afternoon of June 25, but no contacts. VK5 was worked by 4NG and 4ZAZ on the afternoon of July 6. Band was checked in Brisbane and out at 4HD's, but nothing heard though very short skip on 28 Mc. was noticed.

Bob 4NG was in Brisbane on July 7, 8 and 9. He carbashed 4HD from 4WD's one night and paid a visit to 4JO. Topic, 50 Mc. DX. New stations active in and about Brisbane, John 4ZBJ, Lionel 4DR, and Gordon 4ZBI will soon be heard. Stations with QSLs confirmed for JA A.J.D. 50 Mc. now include 4ZGL, 4HD, 4ZAZ and 4JO. Quite a few only need one or two to complete their collection of QSL cards for A.J.D. Brisbane stations are active nightly and at week-ends looking for DX.—4WD.

SOUTH AUSTRALIA

The main activity this month seems to be on 144 and 288 Mc. with the most important news being the consistent working between George 5GB and Hughie 5BC on 144 Mc. This of late has resulted in regular 8 p.m. contacts between both stations with some cross-band 6 to 2 mx. The other night George wondered why he couldn't poke a 6 mx signal into Hughie's location and discovered the next day that his tx was connected to a dummy load! Never mind, George, at least your 2 mx signal was the strongest at Hughie's.

John 5ZBA is very conspicuous by his absence, both on 2 and 6 mx. Oh! how they fall, how they fall. Never mind, John, it happens to most of us some day. John is still active on 388 Mc. using his mod. osc. from portable locations. Whether he has worked portable to mobile with Brian 5ZGT is not confirmed, for 5ZGT's gear is one pushbike complete with genemotor, battery and the necessary for 1½w. input. Where do you fix the 16 el. beam, Brian?

Paid the South East gang a visit the other week and had a nice little chat with Claude 5CH. It seems that 144 Mc. is still the most active band down that way with David 5AW active on 50 Mc as wel. Claude tells me that he has a 40 ft. tower coming up. Claude's gear sure opens the eyes of us v.h.f. hounds, running an 829B, his power between 80 and 100w.; you need that power down there to get through the QRM from over the border. Also had a nice little talk with Col. 5CJ who told me that Leo 5ZAG has his two-letter call, congrats. old man, please remember the v.h.f. bands, Leo. Hope to visit you next time I'm down that way.

The JAs are still doing it, for Ron 5NL tells of a contact he had with a ZS5 on 10 mx who was walking on air, having just worked several JA districts on 50 Mc.; incidentally, the same ZS is looking for VK contacts. Bob 4NG broke through on 50 Mc. on July 6 and told Ron 5MK that he worked three JAs on June 23.

Curl 5ZBL is building a rig of all rigs, one of those 50 to 144 Mc. jobs you put on the table in the lounge room, place your feet on the mantlepiece and talk to the boys in comfort. What will happen to your loading Curl when your XYL uses your folded dipole for drying the clothes on, in front of the fire?

Well fellows, this is the end of this month's news. I hope to improve on it in future and eventually get to the high standard that Comps has set for the VK5 v.h.f. notes.—5ZAW.

WESTERN AUSTRALIA

Apart from one break through on June 1 when 6ZAV worked four JAs in the 30 minute opening, DX has been very low. Local activity is on the increase, Frank 6FW making an appearance, had Frank 6FL with him, who believe it or not is getting the 50 Mc. bug. Ian 6IG also made an appearance working a few of the locals. Bob 6RW heard testing with a dummy load. Tom 6TH working cross-band 80 mx pending a xtal for the tx. Ian 6CL working through to Perth regularly with 6ZAV and others. So much for 50 Mc. P.S.—Russ 6ZBX got his piece of paper at last and working all the locals.

The 144 Mc. Fox Hunt on June 21st Tom 6ZAF was the fox and this one literally went to ground in more ways than one.

The meeting on the 24th was quite a successful one despite the small attendance, due no doubt to the miserable and cold night. 6ZAV.

S W L

Ian J Hunt, WIA-L3007
211 St. George Road,
Northcote, N.16, Vic.

Once again we bring to all our readers the latest news on the s.w.l front. We hope you enjoy reading these notes, and if you do, why not drop a line adding your contribution to the notes? Details of your activities could well be of great interest to other readers.

Card of the Month Contest.—This month the winner of the contest is Robert Tacey, of Newport, Vic., with a QSL card from Achille, FK8AS. Robert, who holds the S.w.l. Number of WIA-L3051, is one of the younger members of the VK3 Group. Achille enclosed a photo of his station and a very interesting note with his card. Here are some of the details he provided. He is a 24-year-old weather forecaster and also has charge of the weather station communications which include 3 transmitters, 7 receivers and 2 radio teletypes. His own rig consists of a DX100 transmitter, SX28 receiver, whilst the antennae are W6JK beams. The photo is that of the first rig used by FK8AS and depicts a xtal controlled 45w. transmitter and a Super Pro and Hallicrafter S40 receiver. With this rig Achille had 2,032 contacts with 93 countries in just one year of operation.

S.w.l. of the Month.—So as to help more of you s.w.l's. to get to know one another, I have re-introduced this feature. I can only keep it going, however, if you write and tell me a little about yourself and your interests in general.

Featured in this month's issue as S.w.l. of the Month is Don Grantley, WIA-L3032. Don is 21 years of age and when just a little boy in short pants went to the local State School at St Albans, Vic., where he was living on a dairy farm. He later graduated to the Williamstown High School. At 18 years, Don joined the R.A.A.F. as a telegraphist and after training at Point Cook station and Brisbane, moved to VK9, thence to Biak and on to the Philippines. Talking of Biak, Don mentions that a chappy by the name of Norm Dash nearly perforated the orderly officer one night. Don is wondering if he is the same Norm "Trigger") Dash of the Urunga Convention. Was it you nearly did a naughty thing like that Norm?

Upon receiving his discharge, Don gave away radio operating and joined the P.M.G. Department. He again took up radio as a hobby in 1951, but lost interest again in 1956. In 1956 he was married, which I guess may have had something to do with his loss of interest in radio. Don now has a beautiful baby daughter, Sharon, aged one year. In 1956 he moved to Holbrook, N.S.W., where he is now located and took on the radio again last year. He is now employed as a groom on a sheep station at Holbrook. So you can see Don has so far had a most varied and no doubt interesting career.

His equipment, which was described in last month's notes, includes a No. 19 rx, SCR522 rx, and a 6-valve t.r.f. rx. Don hopes very soon to pass the A.O.C.P. exam and go on the air himself.

VK3 S.W.L. GROUP

At the June meeting of the Group only 11 members were present, probably due to the fact that the cold weather kept many of them at home in the warmth near their receivers. The Group President, Len Poynter, was in the chair. Reports were received from Ted Wickett, Maurice Cox, Len Poynter and Ian Hunt and then general business was conducted in a minimum of time. Arrangements were made for a party of members to visit the station of Len 3LN, a report on which will appear in next month's issue. After this each member took his turn in describing his receiving equipment to the Group and as a result some rather lively discussion took place on the best method of doing this or that. I am sure everyone went home with quite a few new ideas as a result of this evening.

Other news of members include the fact that our President, Len, and Secretary, Ian, recently sat for the A.O.L.C.P. and A.O.C.P. respectively. Yours truly made a fair mess of the telegraphy reception due to having just run up three flights of stairs, but both of us are, at time of writing, eagerly awaiting the result of the theory paper. Dave Jenkin, of Orbost, was recently in Melbourne on a fortnight's holiday and as well as attending the June meeting visited myself at home and also 3GB, 3XD, and I think 3YS and 3XB. By all accounts he really enjoyed his time in the big smoke away from the daily grind of milking cows and cleaning milking machines, etc. Dave purchased an AR7 receiver to take back to Orbost with him, so he'll no doubt have even bigger lists of DX for Frank 2QL to include in the DX column. Maurice Cox is still playing around with different types of antennae till he finds one to really suit him, and has not yet stopped talking about the most enjoyable time he had when visiting 5MX while recently on holiday in South Australia.

As a result of my recent appeal for back issues of radio magazines, some were kindly given to us by Barry 3JB and Reg 3ZAD. We thank you very much for your kindness chaps and can assure you that they will be passed on to someone who can really do with them. If any others can help us in this way, it will be greatly appreciated.

VK6 S.W.L. GROUP

News now has come to hand of the fact that the Short Wave Group of W.A. has now been recognised as a Member Club of the W.I.A. VK6 Division. We congratulate the Western Australian Division on having taken this step, and trust that the move will result in increased strength of the Division and also provide in the future an influx of new blood into the ranks of licensed Amateurs in that State.

The rules of the VK6 Group include the following points: (1) Each member pays an annual subscription of 27/6. (2) Each member will be entitled to all privileges available to an associate member of the W.I.A. (3) Each member will be issued with an official W.I.A. Listener's Number to be retained by him as long as he is a member of the Group and a financial member of the W.I.A. If he becomes unfinancial, the Number will lapse and cannot be re-issued. (4) A copy of "Amateur Radio" will be posted to each member every month. (5) Members will have full use of the Divisional QSL Bureau. For other details desired by any persons interested, you can contact Eric Hardwick, 28 Streatley Road, Rivervale, Perth. So go to it all you VK6 s.w.l's. and let us know all about your activities.

[illegible]

A very light mail bag this month brings only two letters. These are namely from Don Grantley and George Baty (3AOM). Don, whose letter I overlooked when first beginning these notes, tells me that his latest completed project consists of a power supply with half a dozen power outlets providing various combinations of 6v., 6.3v., a.c. and 300v d.c. which allows him to plug converters, etc., direct into the unit with no trouble at all. It seems like a very good idea. He has now begun the construction of a multi-position antenna switching unit. The completion of this unit will allow him to walk about the shack without becoming tangled with leads running in all directions, he states. Stations heard by him recently include XZ, YJ, EA8, JZ, KZ5 and SV0WP. His country tally stands at 131 at present and still seems to be increasing steadily. Don logged 55 countries on 20 mx during the month of June and says that this is about average for him.

George 3AOM, who, incidentally, is VR3A's OM, has written to me and enclosed a copy of a letter received by him from a Swedish s.w.l., SM3C21. This Swedish listener states that he is 19 years of age and is located in Ornskoldsvik in the northern part of Sweden, not far from the Arctic Circle. His home QTH is well located, being almost on the top of a high mountain. His antenna is a long-wire 107 metres in length, directed to the Pacific. His rx's are a Hallicrafters S20 and SX71 and an RF31 pre-selector which works very well, especially on 40 mx.

During the month of May he logged 13 VK stations on 40 mx phone and received his first VK 40mx phone confirmation from VK2ADV. He has heard on this band VK5FN, VK2AHL, VK2ZL, VK2AIA, VK3OM and VK3FM. He is at present in a contest arranged by the Swedish All-round Radio Club and all QSLs from VK count as 14 points. This listener, whose name is Sven Elfving, is interested in corresponding with an Australian s.w.l., so if you wish to write to him, his address is Solgardsgatan 15, Ornskoldsvik, Sweden. Thanks for passing on the letter George, and hope the old rig keeps getting out well on 20 the way it has been. I can even hear you, so it must be working well indeed.

Well now I must finish these notes off and get back to that morse practice in readiness for October. I hope they have been of interest to you and that you'll drop me a line between now and the next issue to let me know what YOU are doing. Cheers and good hunting until next month.

PREDICTION CHART, AUG. '58

NOTES

FEDERAL

POWER INCREASE

By the time this item appears in print, all Amateurs will have been notified of the increase from 100 to 150 watts input granted by the P.M.G's. Department. Of course the usual conditions apply in respect to size of power supplies and power amplifiers.

I.T.U. FUND

Federal Executive is gratified with the response made by Amateurs throughout Australia to the I.T.U. appeal.

Whilst the results of the appeal have been satisfactory, we still have a long way to go to meet the required target, and in this respect we again ask those Amateurs who have not responded to give a little more time and thought to the reasons behind the appeal, and to reconsider their decisions.

It is in your interest and for the protection of your hobby that this appeal has been launched, and it is your duty to support it.

More on this matter is discussed elsewhere in "A.R."

EXAMINATIONS FOR COMMERCIAL OPERATORS' CERTIFICATES OF PROFICIENCY

In connection with the examination of candidates for Commercial Operators' Certificates of Proficiency, your attention is invited to Appendix 1 of the 1957 edition of the British Post Office manual "Handbook for Wireless Operators" in which, the International Morse Code signals forming the separation sign, used in the transmission of fractional numbers between the whole number and the fraction and of groups consisting of letters and figures (between the groups of figures and letters) differ from those published in earlier editions of the Handbook.

For purposes of examination either form of the signal in question will be acceptable up to and including the Commercial examination to be held on 9th June, 1960, after which only the new form (which is also the signal of the hyphen or dash sign) shall be acceptable.

SPARE VALVES FOR INDIAN AMATEURS

Federal Executive has received a number of letters from Federal Secretary, Doug. Bowie, VK3DU, since he left in April with Mrs. Bowie on a world tour.

Writing from India Doug. says: ". . . the Government has restricted imports of valves and as they don't make them here, they are in a real spot."

Now we all have stocks of valves which we will probably never use again, although they may be quite serviceable. Let's use them to keep our Indian colleagues on the air! Send your spare tubes to the Federal President, Max Hull, VK3ZS, 428 Bourke St., Melbourne, C.1, or deliver.

in South Australia to either of the following:
Gordon Bowen, VK5XU, 73 Portrush Rd., Toorak Gardens,
B. W. Austin, VK5CA, 34 Fisher St., Fullarton Estate,
L. F. Brice, VK5OK, 21 Hampton Street, Brooklyn Park,
J. C. Haseldine, VK5JC, 1 Ormond Ave., Cheltenham Gardens;

in Tasmania to Ken Millen, VK7KA, 57a Butler Avenue, Moonah.

Tubes should be in serviceable condition, and if the type number cannot be read, should be labelled. Tubes will be sent to the Amateur Radio Society of India for distribution by that body as it sees fit.

HANDBOOK FOR OPERATORS OF EXPERI-[illegible]

The revised edition of the above handbook has been released by the P.M.G's. Department and is now on sale at booksellers or from the Department at a nominal cost of 3/-.

It is considered that every Amateur should have a copy of this publication in the shack for reference, information and education.

OVERSEAS PUBLICATIONS

From time to time F.E. receives copies of publications from foreign Radio Societies in which many items of interest are contained.

An appeal is made to Amateurs who are able to translate such languages as Spanish, Italian, German and Dutch, who would be willing to help out in the translation of such technical items, and items of interest which could be reprinted in "A.R."

—. . . —

FEDERAL QSL BUREAU

The A.R.R.L. advises that the new address of the W1/K1 QSL Bureau is: George L. De Grenier, W1GKK, 100 Gallup Street, North Adams, Mass., U.S.A.

Delayed advice has been received that the station PX1FC was scheduled to be active during the first week of July. The station was conducted by F8FC with operators ON4AU, F8JD and F9RS. They proposed working on all bands 3.5 Mc. through 28 Mc. and on 72 and 144 Mc. They state that after the last expedition to Andorra many DX stations failed to QSL, so they have decided that on this occasion they will only reply to cards actually received. The address for QSLs is via U.B.A., Brussels, Belgium. Those who enclose an I.R.C. and a self-addressed envelope will receive their QSL direct. Others will be sent via [illegible]

From the 10th September to 30th September inclusive, concurrent with the 13th Fair of Cremona, the Radio Club of Cremona section of the A.R.I., a competition will be staged between world stations and Amateurs of Cremona. An award is available styled "Cremona Stradivarius Award". Requirements for the award are: (1) Eight contacts with Amateurs in Italy, (2) Six contacts with Amateurs in Europe, North Africa and the Near East, (3) Two contacts with Amateurs in other countries. Contacts must be on PHONE ONLY on any band and the same station cannot be worked more than once. Additionally there will be two awards of gold medals, one to the Amateur in the most distant country from Italy who qualifies for the above award, and another to the foreign Amateur who contacts the most stations in Cremona. Claims and QSLs confirming contacts must be sent to Radio Club of Cremona, Box 144, Cremona, Italy, before 31st December, 1958. Active stations in Cremona are I1's TC, BEM, THZ, BWN, FH, ZAY, TMX, RMO, CIF, AK, BMF, COR, SZH, ZBD, AZN, TAM, and FE.

The R.S.G.B. QSL Bureau will be closed from July 18 to August 12, inclusive. Do not send any correspondence which will arrive there between those dates. In future cards for GI, GM and GW should be sent to the R.S.G.B. QSL Managers in those countries. Their addresses are:

GI—Mr. G. H. Martin, GI5HV, Swallow Lodge, Green Island, County Antrim, Northern [illegible]

GM—Mr. D. Macadie, GM6MD, 154 Kingsacre Road, Glasgow, S4, Scotland.

GW—Mr. J. L. Reid, GW3ANU, 38 Walterston Road, Gabalfa, Cardiff, Wales.

The new address of the Bureau for Denmark is: E.D.R. QSL Centre, Box 338, Aalborg, Denmark. The new QSL Manager is Borge Petersen, OZ3NU. Borge replaces OZ4H who retired in July 1957 after 20 years of service as QSL Manager.

SV0WR, Howard Olson, has worked many VK stations this year, but has received very few cards to date. "Ole" was the operator signing W0MCF/C1 and C3 in China and later Formosa during 1946/48, giving hundreds of overseas stations their first contact with Formosa. He would like all outstanding QSLs to be sent him care U.S.A.S.G., A.P.O. 223, New York, N.Y., U.S.A., or via the SV Bureau, Box 364, Athens, Greece.

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NEW SOUTH WALES

The June meeting of the Division started on a sad note. Those present were told of the passing of "Jock" McDowell, VK2GM. The meeting observed one minute's silence in memory of Jock.

36 new members comprising 17 full and 21 associate brought the membership to an all-time high of 941 members. Although this total contained some 50 whose subscriptions were still unpaid.

Congratulations were passed to the newly formed S.w.l. Group for their excellent work at Dural. A working bee held by the section had resulted in much outstanding work being completed.

The lecture was given by Alan Hennersey, VK2RX, on modifications to Command receivers and transmitters. Alan demonstrated stripped-down and modified units of this excellent equipment.

The deferred motion by Frank 2QL was carried unanimously. Frank and other members spoke on the subject of cross-band contacts made by stations in contests and explained how ridiculous such practice was.

The A.O.C.P. class manager reported the progress of the class. He mentioned that of the twelve in the past class, seven completed the course. Leon pointed out how elimination of Morse Code had made so much more time available for the technical side. 40 students had enrolled for the next class.

The meeting closed at 10.20 p.m. and members again enjoyed coffee which is proving a popular conclusion to the meeting.

[illegible]

Well it's on again—the first post-war Dinner of the Hunter Branch will be held at the University of Technology on October 4 at 7.30 p.m. Judging by the reminiscing of those who attended the previous "do's" their resurrection should be well received, so come along and meet the other chap. Next day will revert to Blackalls Park where a full programme will be provided for all and sundry—full details elsewhere in this issue.

The June meeting was attended by VKs 2CN, 2AQR, 2ZL, 2CS, 2QB, 2XT, 2AKV, 2ANL, 2FP 2SF, 2ZDL, 2RJ, 2AFA, 2AEE, with associates Sutherland, Stobbs, Nichol, Bailey, Grey, Bergmann, Jefferson and Broard. Les 2AOF was absent at Palm Beach Convention and associates Jackson and McLaughlan were en route to the Buccaneer of Burraneer with Bill 2ZL's ARS. The lectures of the Command gear were appreciated by all, as were the circuits provided by Vice-President Stuart 2ZDL. The reversed collar of John 2ANL was noticed at the meeting and as usual Lionel put his foot or something in it welcoming the reverend gentleman. Come again John, the mob could do with a taste of dignity.

Heard Fred 2AEE putting out an excellent signal on 40. City slicker Alf 2CE was piloted into Senile Bay by 2ZL but thought he was lost when he couldn't find Bill's antenna, still he is not on his own there as it is a shrinking violet. Alf and his XYL missed out on the best exhibition of yo-yoing I've seen. The aforesaid article was expertly manipulated by Jim 2AHT who went through all the published tricks plus some of his own. However, 2AQR took umbrage when he had to play billiards against Jim with yo-yos flying past his head while trying to make a shot. 2ZL was last seen practising hard as he thinks he has at last found the "secret weapon" how to best his rival.

Harry 2AFA still on the receiving end of choice DX cards. Bill 2XT still dreaming of geisha girls while Lionel 2CS, when he is not trying to put out a signal on 2AWX, is trying to convince the boys and himself that s.s.b.

SILENT KEY

It is with deep regret that we record the passing of:—

VK2GM—G. ("Jock") McDowell, 25/6/58.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

R.D. CONTEST—

Dates: Saturday, 16th August, 1500 hrs. EAST; Sunday, 17th August, 1759 hrs. EAST

Opening Ceremony: Remembrance Roll Call. Sat., 16th Aug., 1745 hrs. EAST

Rules: Note Rule 4 and 11 for transmitting, June 1958 "A.R."

VK-ZL DX CONTEST—

Dates: Phone—4th-5th October, 1958. C.w.—11th-12th October, 1958.

Bands. All h.f. bands.

(Contest conducted by N.Z.A.R.T.)

"CQ" WORLD-WIDE—

Dates: Phone—Last week-end Oct. '58. C.w.—Last week-end Nov. '58.

NATIONAL FIELD DAY—

Date: Sunday, 25th January, 1959.

OBITUARY

GEORGE ("JOCK") McDOWELL, VK2GM

Amateurs all over Australia were shocked to hear of the untimely passing, on 25th June, of George ("Jock") McDowell, VK2GM. Jock held his call since 1931 and was continuously active except for the war period, when he served with the Signals Section of the R.A.A.F.

He excelled at everything he attempted and was equally at home in the modern laboratory or modern workshop. His signal was always outstanding for he demanded the utmost from his equipment and his ability enabled him to obtain it. He was always ready to assist his fellow Hams and many newcomers had their paths made smoother by his timely advice and help.

A minute's silence was observed, when the announcement of his passing was made, both at the monthly meeting and over the VK2WI news broadcast.

His funeral at the Rookwood Crematorium was attended by a large number of friends and colleagues.

To his wife and two children we wish to extend our sympathy and to state without hesitation that Amateur Radio has suffered a great loss with his passing.

is the only way to perfect contacts. Hope that 2EN, Ed., sends an article to "A.R." on his fully transistorised tx which has been worked with excellent results up this way. Full marks go to Ed. for taking Pop 2AHL out the other day to receive a word-picture of his youthful playground around Wollongong. Of the rest of the local chaps, short skip seems to be playing merry so-and-so and they seem to be too busy with this and that to do much to keep the ether warm these cold nights.

The August meeting of the Branch will be held at the University of Technology on Friday, August 8 at 8 p.m. and the usual social at 2XT's on Wed. 27th. See you all there.

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VICTORIA

There was quite a sizeable muster at the July meeting to hear Herb Stevens (3JO), the President of the V.h.f. Group, and his merry men extoll the virtues of v.h.f.

Herb. has been playing around on these bands for many a long day and his utterances are always treated with the respect they deserve. He started off very quietly by giving us an insight into the possibilities of the bands, where they lie and the type of chap who dabbles therein, but he really worked up to his subject when he switched to field days and 50 Mc. DX. It was then that you could see where his interests lie. As Herb. explained, the higher frequencies, with their smaller gear, are particularly suited to portable and mobile work and much of the finer weather can be spent in these pursuits. However, from what I can make of it there always seems to be difficulty in finding enough mountains to go round.

After these few opening remarks, Herb. introduced us to some portable members of the Group and a more enthusiastic band of chaps would be hard to find. As each came forward he brought his gear, described its make-up and operation, answered questions, and then retired in favour of the next contestant. The first to speak were Ray 3ZAE, John 3ZAI and Bob 3AN who work as a team. Ray and John are the tx men and Bob seems to concentrate more on the rx and power supply angle. Following these came 3ZDP (apologies OM for missing your name) with his mobile 144 Mc., Michael 3ZCS of series modulation fame, Jock 3ZDG the 532 king, Ron 3AHJ with his walkie talkie outfit, Bruce 3BF who likes to be alone (he works 576 Mc.), and Keith 3YQ on printed circuit techniques. As can be imagined there was plenty of first-class matter to listen to and hints and kinks galore, so don't be surprised if there is a sudden rush of activity on the bands by the d.c. boys, you v.h.f. chaps. Admittedly you have to change your perspective somewhat in making the change, but what of it, results are good from a minimum of power and 50 Mc. DX is likely to be with us for a year or so yet. All told, it was a very profitable night, thanks to Herb. and his band of willing workers.

It would be more profitable, of course, if all that was expounded could be committed to paper and published in the magazine as these boys have really gone places with their experiments. The knowledge so propounded would be invaluable to others who work on the frequencies and especially to those who were unable to attend the meeting. The Technical Editor was there with a very expectant gleam in his eye so, who knows, we might be lucky enough to fluke an article or two. (Prospects look bright so far.—Ed.) What we really need is someone who has the time and the ability to scout around and write up all this stuff as most of the blokes who are getting the results are usually too busy to write about their doings. Any volunteers? We in Victoria are very lax in this regard as most of the technical articles submitted come from other States. At the moment the situation is very grim and the Technical Editor would welcome any contributions with open arms. Here is an opportunity for VK3 to retrieve some lost ground, so don't be backward in coming forward.

New members admitted at the meeting were: T. J. Poussard and R. G. Loutit Junior Associates; R. F. Leman, Associate, and the following full members. D. J. Knox (3GK), P. B. Turner (0PT), H. A. Harris (3ZEY), M. B. Anderson (3AMA) and L. N. Tate (3ZGT). As most of the evening was given over to v.h.f. there was very little general business transacted. However, we did hear that power input has been increased from 100 to 150 watts and this, no doubt, will gladden the hearts of most.

Word came through from our Federal Secretary in India that Hams in that locality are desperately short of valves. If you have a surplus of this commodity and would like to donate them to a worthy cause, send them to Max Hull 3ZS who will see that they are forwarded on. No duds please by request, and please ensure that each valve is readily identifiable as to type.

Slow morsers will probably be pleased to hear that ZKF is back on the air with daily broadcasts. Details of these broadcasts are believed to be as follows: Times E.A.S.T. 4.30 to 6.00 p.m. Speeds 5 to 30 w.p.m. Each broadcast is broken up into sessions of a quarter of an hour each. The first session is at 5 w.p.m. which increases by 5 w.p.m. in each successive session. The frequency being used is 6885 Kc. which is very close to the Flying Doctor service so that copy is usually only possible between overs from the latter service.

In response to requests, here is a list of Victorian Division Life Members. R. A. C. Anderson, 3WY; F. P. Court, ex-3TP; J. C. Duncan, 3VZ; A. J. G. Glover, 3AG; W. R. Gronow, 3WG; B. Hardie, ex-3YX; R. W. Higginbotham, 3RN; T. D. Hogan, 3HX; W. F. M. Howden, 3BQ; R. E. Jones, 3RJ; J. G. Marsland, 3NY; J. M. Martin, ex-P.M.G's. Dept.; Fred Schnell, W8UZ; H. N. Stevens, 3JO.

There will be an illustrated lecture at the next meeting on "Eyesight and Television" to be given by Mr. Owens, who is associated with Andrew Geddes Pty. Ltd., Optometrists, Melbourne. This is a topical subject and promises to be very informative, so don't miss out. To those of you in the country or in distant suburbs, don't forget that some of the lectures given at the meeting nights are on tape and may be borrowed from Len 3LN. There are four tapes available at the moment I understand. Len has spent a lot of time in obtaining these recordings and we are very grateful for this service which he gives to members.

MIDLANDS ZONE

It is heartening to note that the zone activity has "risen from the grave" and the fortnightly hook-ups have commenced on 80 mx with quite a good roll up each night in distinct contrast to the nights following the formation of the zone. Regulars on the hook-ups have been 3ACN, 3FY, 3IZ, 3SV, 3APJ, 3DG, and 3ARS, and quite a lot of steam has been let off, despite the cold, or possibly because of it.

At Castlemaine R.S.L. Hall on 8th July, the first meeting for this year was held with the above calls in attendance; also Don Carr. An apology was received from 3FO, who is kept fairly busy earning a crust these days. With a borrowed tape recorder, and a tape of a lecture given by Commander Batterham at Melbourne on the activities of Frogmen during and after the last war, we spent quite an enjoyable evening before the fire. After the tape, and supper provided by the local cafe, Peter 3IZ was appointed President for this year with 3ACN again as Secretary, and 3FY as Correspondent and Treasurer.

3ARS recently put up a respectable piece of timber, which weighs 2 tons, stands 80 ft. high, and took two tow trucks to get it into position. Apparently at one stage when transferring the lift from one tow truck to another, the first tow truck almost became air borne, its certificate of air-worthiness having been revoked, it was compelled to stay on the ground, much to the relief of its operator. Also in construction at 3ARS is a new shack, which is to be doubly screened in the hope of confining harmonics to that place where the harmonics should be confined. All in sundry seemed to be plagued with t.v.i., even though all the necessary precautions are taken, especially on 15 mx. I wonder if anyone else has had any trouble. Could be?

For those interested, before I forget, the zone hook-ups are on the second and fourth Tuesdays of each month at 7.30 on the high end of 80 mx.

EASTERN ZONE

If you want to keep on seeing the Eastern Zone notes appear in the magazine, get the information through to me, as it is impossible to write these notes without information.—W. G. Francis.

[illegible]

Roy 3CE, of Birkwillock, is busy constructing an W8JK rotary beam, so hope it performs to expectations Roy. Alan 3AJX, of Horsham, and, Herb. 3AJJ, of Lubeck, are building gear to operate on the 2 mx band, so this adds to the already keen interest taken in this band around this area.

Our latest Ham on the air is Vic. Maddern, 3AEQ, of Murtoa. He is transmitting a nice signal on the 40 and 80 mx bands. The rig consists of a Geloso driving an 807 with a pair of 807s as modulators.

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QUEENSLAND

Perhaps of prime importance is the recording of another successful convention at Palm Beach, Qld., on June 14-15-16. To date no financial results have been published but indications of a small profit reflect favourably on the administration, catering, etc. For a very excellent job performed we must thank Bruce 4ZBD, Brian 4ZAP and Tom 4ZBH. These boys went to a great deal of trouble in the weeks prior to and during the Convention to

make the show the best yet. The amount of organising that was done can only be appreciated by those people who have had a similar task themselves. Like most good organisers the boys found themselves in the position of not being able to participate in the various events and believe you me, they missed out on a lot of fun! Once again thank you boys for a splendid effort.

One of the added attractions this year was the excellent meals and efficient catering. Two charming ladies, Mrs. Lane and Mrs. Ferguson, provided an amazing cuisine and so economically that it was astounding! We thank them sincerely and trust that their services are available next Convention.

The total number of registrations was around 78, which, considering the prevailing cold weather, really is a good effort! Members are reminded that the fellows who had the most fun were those who brought gear to the Convention and made use of it in the contests.

We were very pleased with the interest taken in our Convention by the VK2 boys and judging by the roll up, one wondered just whose Convention was it? Perc 2APQ, VK2 President, flew up and during the course of the week-end's events was able to show VK4 boys just what was going on in VK2. During the W.I.C.E.N. conference I think most of the boys felt that if VK4 was to be in the picture we would really have to put our shoulder to the wheel! Bob 2ARG brought W.I.C.E.N. gear along and during lectures very ably demonstrated the effectiveness of the gear. It would appear that VK2 has a very good grip on W.I.C.E.N. problems and the practical way they have solved them is commendable! Thanks for all your trouble Bob. It was appreciated.

It would be difficult to list all the boys who travelled long distances, but the following should show at least the far-reaching organisation of the Convention Committee: Perc. 2APQ (VK2 President, Sydney), Bob 2ARG (Palm Beach), Jack 2ADT (Inverell), Eddie 2BB (Tweed), Bill 2ZY (Murwillumbah), Norm 2RK (Murwillumbah), and Les 2AOR (Newcastle). These are just some of the call signs that spring to mind. All those other chaps who came and who haven't been listed certainly were not overlooked, we enjoyed your company to the full and we hope to see you back again next year.

The easiest way to report the winners of the contests is by saying that John 4FP won all the contests except the blindfold tx hunt which was won by Tom 4ZBH. Good work, John and Tom.

It would be difficult to itemise and detail everything that eventuated at the Convention so news and information will be spread over the next one or two issues of "A.R."

As the June general meeting was taken up with a film show, very kindly organised by British Petroleum, there was little time to devote to discussion of Institute matters. The President, John 4FF, requested members to defer as many matters as possible until the following month and consequently no contentious matters were raised. The meeting lasted some 40 minutes before we had to vacate the M.L.C. Building, Edward St. Bruce 4ZBD gave a detailed report of the Convention and doubtless new methods have already been formulated for an even better Convention next year. One item of particular interest to VK4 boys is the formation of a v.h.f. society. It will meet at 4JO's QTH, third Friday each month at 8 p.m.

Well boys please bear with me and my demented style of reporting, but my concentration deteriorates in proportion with every new increase in the family!

MARYBOROUGH

The 10 mx quad at 4CB was damaged by wind. Meantime, Archie is working the boys on 7 Mc. 4DJ stayed up until 2 a.m. for 21 Mc. contacts with Europeans. Grahame has lost a few power trannys lately. Has been heard working DX on c.w. for the first time. Getting an S meter for his Eddystone 750.

Dormant Hams, 4GH and 4AI, have been lining up their receivers, so maybe we will hear them soon. Alan is making a come-back, using xtal controlled c.w., of all things. 4BG, now using a bug, says his customers can't complain that they are not getting enough dots.

TOWNSVILLE

Do not know what has happened to the boys in this area, because once again there was not much of a roll-up at last general meeting held 26th June at residence of 4BX. Bill 4ZBE gave a complete survey of his visit to the Palm Beach Convention. He was very sorry to miss the final day, Monday. His report was so well given that a couple of the older Amateurs promise to try and get there next year. Unfortunately John 4DD was unable to be present to give his lecture which has been deferred to the July meeting. As a few of the boys will be facing the barrier next week we wish them one and all the best of luck. One of the Z call sign boys is trying for the Morse Code.

Activity on the bands up here is very poor. Must be the weather or the conditions as there is no t.v. here for an excuse for not coming on the band occasionally. Ted 4EJ arrived back from Sydney displaying a new patch caused by watching the one-eyed monster, started saving all the small coins to get one when Brisbane station starts to cause the boys down there t.v.i. troubles.

The writer, as President of the T.A.R.C., interviewed the local Federal Member, Mr. Edmonds, and gave him a brief survey of Amateur activities in the Bowen cyclone, see "A.R." May, p.12, he being in the dark just how the Amateur helps in times of emergency. Mentioned also the help given in Northern Rivers district in previous years. Mr. Edmonds promises to help in every way possible.

Bob 4TK sends along his usual news of doings on 7 Mc. Bert 4BP has been on holidays, but has joined in the evening hook-up. Vern 4LK has a galah that persists in entering the shack and adding to the QRM on the band. It can screech 5/7. Vern still fixing new oscillator. Harry 4ZP has two additions to his sound effects. Harry is due for long service leave in a few months. Bazil is building a cubicle quad, his XYL doing the paint work on it. Has rebuilt his modulators using zero bias 807s. Congratulations to Nick 4WT on the arrival of a new female harmonic; not forgetting the XYL. Promises to come on the air occasionally.

Harry 4HK not heard for some time. 4MA popped in on a recent evening hook-up to enquire about Andy. Had a quest visitor, a s.w.l., Ian, from Adelaide who also called on 4ZW while in Cairns.

Bob 4RW has been calling in more regularly lately. In fact both the morning and evening hook-up has never been so well populated. John 4DK not heard from so much lately. In a letter he stated he was very busy. Don 4PW is having a spot of trouble with his multiband coupler, but still puts out an f.b. signal. Bob 4TK has completed his c.r.o. and now pleased with same; was off the air for several years until 4ZW pepped him up and caused him to spend many db's. Speaking of db., have all you fellows in the north sent in your db. for the delegate to the I.T.U. at Geneva? Get in early so that matters can be finalised.

Edgar 4GF heard at times, likewise Eric 4EL out at Clevedon.

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SOUTH AUSTRALIA

The "Tender" programme—and just how tender can a programme get—was the usual success, drawing a big crowd of members and visitors, who so enthusiastically supported the energetic "Tenderees" Warwick 5PS and Norm that the whole of the goods submitted found new owners.

Just prior to the start of that portion of the proceedings Doc 5MD rose to the occasion and after a brief and moving reference to the late Dougall 5BY called for a minute's silence in his memory.

Warwick then embarked on his new career, with the assistance of Norm, of course, and displayed a few hard streaks of business ability that rather belied that smiling easy going exterior that he is prone to exhibit.

His introductory remarks rather flavoured a free ad. for the nearby b.b.s.s., all the same some of us always thought there was some monkey business at that place, so now we know. Anyway, we are grateful to you Warwick for filling a difficult role so easily and successfully, and feel sure that your candid assessment of values, etc., left no doubt in anyone's mind that fair values were obtained and paid.

One feature of the meeting that must not be overlooked when assessing its success, is that it was conducted by the two Vice-Presidents, Lloyd 5OK occupying the chair in the absence of Brian 5CA who let the prevailing wog attack him. The Junior Vice-President had to read minutes (and take them) and also do some of the accounting work (check your adds boys) and see that everyone, including Doc 5MD was kept busy.

In general business the matter of the subs. to the I.T.U. Fund was brought to notice of all members once again, and it was agreed that anyone who wishes to pay their £1 to the Divisional Secretary, John 5JC, can do so, and he will then send on to Melbourne in bulk. Fill out your card when sending the sub. along so that correct acknowledgment can be made at the right time. You will hear more of this later. In any case the suggested £1 is the asking or minimum amount, but if you feel generous there is no limit to what you can subscribe.

The cards have gone out to full members only (indeed to all licenced Amateurs—whether members or not), but not to Associates. Now there is nothing to prevent an Associate from making a contribution, which our Secretary will be pleased to accept, for, after all, Associates hope to be full members some day, so the things we will be fighting to retain at I.T.U. are vital and of concern to all intending full members.

We were pleased to welcome the following to membership: Full members—A. E. Shepard, 5DC; C. C. Rowe, 5UR; G. Wilde, 5ZGW; A. B. Holleban, 5ZBQ; L. H. Vale, 5NO; R. E. Langfield, G3IHC; and Associates—R. T. Rowe, W. Simmister, T. Johnson, G. J. Phillis, R. McCosker, J. M. Vale, P. C. Drewer, A. C. Fehlberg, H. Holthouse, H. G. Kent, A. Adams, Norm Coltman and Co. must have been very busy, and we understand there is a further big group coming on for next month.

It is advised that Ray Tuck (T.v.i. Committee) is now connected to the 600 ohm line, his number being LF 5725, so if you have a problem within the scope of this committee a ring to that number will start some action.

The R.D. Contest will be with us shortly after you read this, so check up those rigs, look the antenna over and solder all those dry

OBITUARY

DOUGLAS ROY WHITBURN, VK5BY

It is with great sorrow that we mourn the sudden passing of Dougal at the end of May.

His interest in radio extended into the early twenties and he obtained his licence and received the call sign of VK5BY in 1925. As an operator he could equal any and quite recently, to his delight, he was nominated as a Member of the First Class Operators' Club.

Like so many of his Amateur friends he responded to the appeal by the R.A.A.F. to serve his country as a Wireless Operator and Instructor. And many who trained at Signals School at Ballarat will recall his cheery "Early-Bird" programmes that he provided to get the slow ones out of bed.

In Institute affairs he took a keen interest and served on the Council as Secretary and President prior to World War II. On the reformation of the S.A. Division in 1946 he was responsible for much of the hard work of recruiting members and gave freely of his time and valuable advice to the new Executive.

On the air he was particularly interested in operating 14 Mc. c.w. and hundreds of his overseas friends are going to miss the familiar VK5BY. He had over 200 countries confirmed, but spent much time rag-chewing, a past-time he loved for he talked with his "bug key" as with a second voice.

At the time of his passing he was still serving the Institute as one of its Trustees.

Truly it can be said that here was a life spent in service to his fellow men and the loving care of his family.

To his widow and children we extend our sincere sympathy and pray that the Grace of God will bring comfort and understanding to them in the days ahead.

— VALE VK5BY —

joints, get a supply of contest sheets and pencils, make the necessary domestic arrangements to enable an expanded operating schedule possible, to really give the contest a go this year.

The new rules, details of which have already been published, together with notes of explanation, gives the "minor" operator a better chance now to include his contribution in the State score, so it is up to everyone to try and get that trophy back to this State for another spell. Don't knock off at the minimum score, pile them up and be in the fun, for every contact counts.

Ken 5KC was amongst those mobile over the June holiday week-end and operated portable at Black Springs. A good signal Ken, better at the distance than close, but then it was a peculiar week-end for 7 meg. work.

Have heard that Wally 5DF can prove he plays bowls, having received four trophies for his prowess in that regard, in fact Keith 5KH has actually seen them, which as he quotes, "Wally regards them as precious as DX cards." Good luck to you Wall, but don't keep off the bands altogether.

The 5FY tx in use at 5WC these days has finally buried all its bugs, in fact so good that Paddy Mark I. and II. modulate well. A visit by the R.I. up there helped the noise problem quite a bit.

Keith 5KH 'tween perigrinations, continues to keep Eden Hills on the map, with Chas 5ON doing his share for the hills. If you are looking for an idea for a sky wire to fit a small back yard drop in on Tubby 5NO at Elizabeth and see the arrangement he heats with r.f. Works, well, too, judging by some of the reports the boys give him on his signal. Don't know exactly what type you would call it, it's not a quad either, cubical or comical, not a dipole, tripole, or monopole, you tell 'em Tubby.

"See you when you are older" Luke 5LL manages a constant signal and cheery comeback on any QSO.

David 5AW gives 40 a good airing now, and since fitting the half-wave filters to the feeders has put his trouble behind him. Hughie 5BC comes on the d.c. bands a lot these days and is often heard here at very good strength.

If any of you miss out on the session on Sunday mornings, tune to 3 or 6 mx on Sunday night at 8 p.m. and hear the replay of it from 5GB. This service is provided by George for those who either cannot make it at 10 a.m. or are the late risers.

Talking of tapes, there are a number available, of lectures given at previous meetings and can be obtained from Gordon 5KU, to whom all enquiries should be directed. It is a part of the service available for country members who may not be able to attend these interesting meetings.

Technical articles are required from members for publication in this magazine. There must be many projects under construction, modifications of existing gear, or general ideas worth passing on to others that could make an interesting and helpful article to someone. So out with the pens fellows and get VK5 back into the news again. These articles do not have to be earth shattering, remember if a project interested you, it must necessarily interest many others, and if you solved it better still, let's know about it.

Tom 5AQ at Leigh Creek now active and looking for contacts. Lance 5XL is varying his hobby by interesting himself with a film club where they are working with a film and tape sync. scheme. Joe 5JO and his boys' club recently entertained some of the Two Wells boys when Tom 5TL, Carl 5SS, Frank 5MZ and John 5ZBA joined in and made a Ham night of it demonstrating some 1 and 2 mx gear and having some interesting contacts whilst so doing. Some models of electric trains made by the club members were also shown and played with by the "big boys". A good work Joe and Co., may it grow in strength.

We were all very sorry to learn of the sickness that is laying Jim 3LM low for although he is not a VK5 Ham, his voice surely is, for he must be one of the most consistent voices from VK3 heard and worked here. Do what they tell you, Jim, and take it easy, then come up smiling.

Instruments, yes, Doc 5MD again, whose phone number is LA 3911, these instruments are in demand so if you want one register your need with Doc and he will tell you when it is available.

The increase of 50 watts in maximum power input announced early July will no doubt suit many, more particularly the v.h.f. boys, so no doubt a lot of soldering irons are busy right now hitching the bigger tubes up or altering transformer tappings. It will certainly be easier to get better efficiency with the popular output tubes now, that previously had to be "screwed down" to keep below 100w.

WESTERN AUSTRALIA

I must apologise for the brevity of the notes this month, but this is due to your scribe having been on holidays and out of touch with things in general.

Last month's meeting was held as usual. The lecture for the night was given by Norm 6NF, who brought his crystal filter s.s.b. rig to the meeting. Norm told us of his endeavours to get a s.s.b. rig running and his final success with the filter type. The rig shown to us drives a final 100TH linear.

The announcement of the increase in maximum legal power to 150 watts came last week and was received with mixed feelings by VK6 Amateurs. It will make no difference to the QRP single 807 brigade—good luck to them. The majority of the others are using some tube combination which will permit of an increase beyond the 100 watt mark with little difficulty.

This month has seen a quietening of the DX bands, particularly 28 and 21 Mc., where few signals can be heard at present. This is expected to improve rapidly over the next few weeks. 40 and 80 mx have had their usual share of activity. These bands are being used a great deal these days. 6 mx is very quiet at present, being inhabited only by local stations. There was only one JA opening in June, when one station worked five JAs. The local boys are still turning their guns on Africa, but apart from a signal from 5CL being heard in ZS, nothing has eventuated.

Visited 6MU during the last couple of weeks. I was amazed at the signals put into Merredin (163 miles) by the 20 mx gang in Perth. 6KW and 6MK could be heard S9. I believe this is quite usual in this location.

6MA has been working on his rig and is getting it well set up. Transmitter and modulator are complete, and Alan is now working on a converter to put ahead of a compass rx.

As I said, notes are brief this month, so I'll say goodbye till next month.

The response to the appeal for funds to send a representative to the I.T.U. conference has been very gratifying so far. Have YOU sent your £1 yet?

— . . . —

TASMANIA

NORTH WESTERN ZONE

I believe it has happened at last. Ted 7EJ has commenced the beginners class at Devonport with about nine starters at the first meeting. Theory only is being attempted at the moment, but later it is hoped to expand and increase the meetings to weekly ones instead of monthly and also to include morse code instruction.

As mentioned last month, associate Ken Brown acquired 7RN's 107 rx and is busy building converters for it. Real hot they are too. Last time seen, Ken was replacing a head gasket on the Vauxhall. You shouldn't drive it so fast, Ken. Associate Terry Tongs has been welding the garden fork, probably expects an early spring. Apart from that Terry has acquired a ZC955 radar rx as advertised. Sounds like good t.v. material, Terry. 30 Mc. i.f. strip and a front-end which can be made to cover channel 7.

President Sid 7SF is also keen on the radar rx. Sid has also bought a xtal calibrator for 144 Mc., so anyone requiring frequency checks on 2 mx are welcome. Roy 7RN, although not heard lately, has embarked on the construction of a beam. This, presumably, will be mounted on top of the converted wind-mill tower, with the t.v. beam on top again. Another signal not heard for many years is from George 7XL, who has become so disgusted with the absorbent effect of the ionospheric cloud on 56 Mc. between here and VK3 that he has deigned to come down to 7Mc. George is running 80w., so should get out OK.

Our worthy Hon. Sec., Max, is away for a few days in Launceston, chasing grass seeds or something. Hope you had time to look some of the boys up whilst there, Max. The Devonport t.v. king, Athol Manning, says things are pretty quiet at the moment, although he has had some interesting results using a rhombic about 35 ft. up. Pat 7FM seen in Burnie recently after a bout in hospital; trust everything is OK again now, Pat.

As these notes will be the last notes I shall write as 7LS for some time, and as I shall be in VK6 by the time these appear, and the next meeting is held, may I take the opportunity of saying 73 all round, thanks for the many happy meetings. Cheers, 7LS clear.

PAPUA-NEW GUINEA

The meeting this month was once again poorly attended, there being only three members and two associates. It is hoped the absentees will be present at our next meeting. We welcome a new member this month, Bob Hooper, VK9RR, ex-ZL1AJK and ZL1AIR. Bob hails from Hamilton and is doing a tour of duty with O.T.C. here. Bob is very active on c.w. and recently was heard on phone.

Another surprise packet this month was our brass pounder, yes, the wrist has broken at last and Russ 9XK is now trying to break the jawbone. I heard him the other night with a very pronounced quiver in his voice. He reckons it's his microphone, but don't you believe it. Nerves—a plain case of nerves, that's what it is. Anyway, good luck in your new venture, Russ.

This Division will be holding meetings on the air in the near future to try and stir up more interest than we have at present. So all you chaps in the bush, keep your ear tuned to 9WI for further announcements.

The time of the Sunday morning news bulletin has also been altered and can now be heard at 8.30 a.m. instead of 10 a.m. Apparently the chaps forgot about this change last week.

It was announced recently that the new regulations were ready and anybody requiring a copy should contact the Secretary who will send away for them.

Well, I'll have to QRT for now, but remember the monthly meeting is held on the last Wednesday of each month at 8 p.m., same QTH. A 100 per cent. attendance is expected.

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